9. Configuration Management Procedures

The procedures that have been prepared are applicable to all of ECS including all hardware, software, and firmware components of systems or subsystems developed or acquired by the ECS contract and/or delegated to configuration management control by the operational site-level organizations. The procedures are applicable to all items maintained by the ECS Sustaining Engineering Organization in support of ECS mission-specific projects and multiple mission-specific institutional facilities. The procedures are not applicable to those entities controlled by higher level ESDIS Project Office CM Plans. The procedures also apply to ESDIS authorized replacements of or augmentations to fungible assets at extant facilities. CM procedures already in place may be used by the contractor subject to direction from the Change Control Board (CCB) chair person.

Some major features of the approach being offered here include:

- Customers participate in establishing the procedures;
- M&O does not constitute a CCB, but rather performs a support role for ESDIS and its designated on-site CCBs;
- Prioritization, automated tools and procedures are used for handling change requests;
- Diverse/Strategic representation at hierarchical CCBs facilitate a path for speedy escalation/resolution of problems/issues;
- Local organizations have the needed autonomy to accomplish their mission with the minimum necessary outside intervention to promote timely resolution of local problems and enable timely production of data products;
- Proper use and deployment of CM database assets to support all CCBs allows management monitoring, control, and analysis of activities;
- Coordination with the Failure Review Board allows coordinated response to problems and filtering of prioritized issues; and
- Common CM tools will be used in all elements of the ECS Project during operations.

The procedures are organized into nine major sections that address the flow-down of procedures from the ECS system-level to the site-level with references to site-tailoring of procedures where applicable. The topics include (Section 9.1) configuration identification, (Section 9.2) change control processes, (Section 9.3) configuration status accounting, (Section 9.4) configuration audits, (Section 9.5) data management, and the use of standardized CM tools known as (Sections 9.6 and 9.7) Software CM Manager (ClearCase), (Section 9.8) Change Request Manager (Distributed Defect Tracking System), and (Section 9.9) Baseline Manager (XRP-II).

9.1 Configuration Identification Procedure

9.1.1 Purpose

The purpose of configuration identification during maintenance and operations is to incrementally establish and maintain the definitive basis of control and status accounting for the ECS control items. To accomplish configuration identification for both hardware and software, the configuration management (CM) administrator (CMA) shall ensure the maintenance of each ECS configuration controlled item in an operational baseline by executing the following tasks:

a. Assign identifiers to configuration items (CIs) and their component parts and associated configuration documentation, including revision and version number where appropriate. Assign serial and lot numbers, as necessary, to establish the CI effectivity of each configuration of each item of hardware and software.

b. Follow ECS developer guidelines as referenced below in section 9.1.3.

c. Follow vendor nomenclature for COTS items.

d. Apply operation and maintenance (O&M) version name extensions to ECS modified item nomenclature following the rules in Section 9.1.4.

e. Follow author-designated version control and nomenclature for documents and follow guidelines from the ECS Librarian (cf. Section 20, *Library Administration*)

f. Support the ECS Librarian's efforts to maintain linkage of the ECS documentation to ECS configuration items in the Baseline Manager tool. Ensure that the marking and labeling of items and documentation with their applicable identifiers enables correlation between the item, configuration documentation, and other associated data.

g. Maintain a release system for configuration changes (cf. Section 9.2, *Configuration Change Control Procedures)*.

h. Maintain views of operational baselines using the Baseline Manager tool (cf. Section 9.9).

i. Ensure that applicable identifiers are embedded in the source and object code.

9.1.2 Applicable to

All ECS CM Administrators and support personnel.

9.1.3 References

ESDIS CM Plan, June 1996

MO&DSD CM Plan, Sept. 1995

ECS M&O CM Plan, Nov. 1995

Software Build Process, CM-1-023 (25 March 1996)

Software Naming Conventions, SD-1-015 (14 July 1995)

Directory and File Name Guidelines and Standards for Release A, 15 April 1996

Document Numbering, DM-1-002 (25 November 1994)

DoD Mil-Std-973, April 1992

9.1.4 Procedures

9.1.4.1 Extended Configuration Identification

The extended configuration identification for ECS is of the standard form:

Control Item.Release.Organization.#_Dev.#_M&O.#_center

where:

- *Control Item* is the ECS Project designation of the CI at RRR turnover. The CI naming convention has been explained in CM-1-023 *SW Build Process* and further elaborated in SD-1-015 *SW Naming Conventions*.
- *Release* is the major release, A, B, C, or D.
- *Organization* is the organization that established the configuration. Legal values are DEV for development, M&O for Maintenance and Operations system-wide, or center (e.g., SMC, EOC, EDC, GSFC, etc.) for center unique.
- *#_Dev* is a numeric identifier applied by the development organization to the major release and/or a minor release.
- *#_M&O* is a numeric identifier applied by the M&O/SEO organization. This field is used by the SEO organization to establish the system M&O baseline.
- *#_Center* is a numeric identifier applied by each center. This field is used by the operational centers to establish the site specific baseline.

For example, at the TRMM Development Release RRR, the ECS CCB establishes the initial operational baseline. Assume this baseline is identified as CI.A.DEV.3. CI.A.DEV.3 is delivered to the ESDIS CCB. After ESDIS CCB acceptance, the M&O organization will configure and build its first, system-wide baseline, CI.A.M&O.3.0. If it is assumed that some M&O tailoring is applied, the baseline released to the operational centers is CI.A.M&O.3.1. Each center then configures a center specific baseline. The RRR baseline for EDC, GSFC, LaRC, and NSIDC as well as the SMC and EOC is built from CI.A.M&O.3.1 and are identified as CI.A.EDC.3.1.1, CI.A.GSFC.3.1.1, CI.A.LaRC.3.1.1, CI.A.NSIDC.3.1.1, CI.A.SMC.3.1.1 and CI.A.EOC.3.1.1.

9.1.4.2 Other Procedures as Applicable

The CM Administrator will author other configuration identification procedures applicable to the local site environment to carry out the objectives listed in the Section 9.1.1 Purpose.

9.2 Configuration Change Control Procedures

9.2.1 Purpose

The ESDIS CCB chartered Change Control Boards (CCBs) shall apply configuration control measures to all the ECS configuration items and the associated documentation prior to the time it is baselined for operations. The CCBs shall apply configuration control measures to

a. Ensure effective control of all CIs and their approved documentation;

b. Provide effective means, as applicable, for (1) proposing engineering changes to CIs, (2) requesting deviations and waivers pertaining to such items, (3) preparing notices of revision, and (4) preparing Specification Change Notices; and

c. Ensure the implementation of approved changes.

9.2.2 Applicable to

All ESDIS chartered ECS CCBs.

9.2.3 References

ESDIS CM Plan, June 1996

MO&DSD CM Plan, Sept 1995

ECS M&O CM Plan, Nov 1995

ECS Development Facility Change Control Process CM-1-007, March 1995

9.2.4 Procedures

9.2.4.1 Configuration Change Request Preparation

The Configuration Change Request (CCR) form in Figure 9.2.4-1 has been developed as a medium for the drafting of CCRs throughout the ECS Maintenance and Operations environment for changes processed by the ESDIS Change Control Board (CCB) and its ECS site-level chartered CCBs at the SMC, EOC, and DAACs (GSFC, LaRC, ASF, EDC, JPL, NSIDC, and ORNL). There are numbered items on the form that correspond exactly to the data entry required to be performed by the respective Configuration Management Administrator who maintains CCR records for the CCB on the distributed implementation of the Change Request Manager tool. Each CCB will have unique CCR identification sequence numbers. Each CCB can forward CCRs and reports from the Change Request Manager to SMC where SEO processes system-level CCRs for ESDIS CCB. The ESDIS CM Plan will determine the charter of the respective CCBs and thus the scope of CCR issues to be addressed by the site CCBs.

Earth Observing System Data and Information System (EOSDIS)
Core System (ECS)
Configuration Change Request (CCR)

1. **Configuration Control Board (CCB)**
ESDIS:___ ECS:___ SMC:___ DAAC: GSFC___, LaRC___,
ASF___, EDC___, JPL___, NSIDC___, ORNL___ EOC:___

2. CCR No.

3. Submitted Date:	4. Revision	5. Priority Emergency ☐ Urgent ☐ Routine ☐	6. Change Class	7. Status

8. CCR Title:

9. Originator: Org: e-mail: phone:

10. Approval:_____ _____
signature date

11. Reason for Change

(indicate attachment ___)

12. Description of Change

(indicate attachment ___)

13. Impact Analysis:
Cost: ☐ None ☐ Small ☐ Medium ☐ Large
(Not exceeding $100,000) ($100,000 to $500,000) (Over $500,000)
Evaluation Engineer: Org: e-mail: phone:
Impact Evaluators: ESDIS___; ECS Dev___; SEO___; SMC___; DAACs: GSFC___,
LaRC___, ASF___, EDC___, JPL___, NSIDC___, ORNL___; EOC___;
Others_____ (indicate attachment ___)

14. Comments: (Indicate Sites/ Organizations Affected)

(indicate attachment ___)

15. Board Action: ☐ Approved ☐ Withdrawn ☐ Disapproved ☐ Deferred Until_____
date
Further Action Required: ☐ ECP ☐ Waiver ☐ Deviation ☐ Tech Direction ☐ Contract Mod.
☐ DCN Other:_____

16. CCB Approval
Chair:_____ _____
signature date

17. CCR Implemented
CM Admin. signature:_____ date:_____

Figure 9.2.4-1. Configuration Change Request (CCR) Form

The following enumerated text corresponds to the numbered items on the CCR form:

(1) **Change Control Board (CCB) --** The designated CCB is checked-off for changes processed by the ESDIS Change Control Board (CCB) and its ECS site-level chartered CCBs at the SMC, EOC, and DAACs (GSFC, LaRC, ASF, EDC, JPL, NSIDC, and ORNL).

(2) **CCR Number --** The unique serialized CCR number is applied at each site.

(3) **Submitted Date --** The date that the CCR was prepared is documented.

(4) **Revision --** The current revision is designated for tracking changed versions of original CCR.

(5) **Priority --** The priority level of the CCR is assigned. Emergency CCRs may have already been implemented on a temporary basis by the Trouble Ticket Review Board (TTRB) with concurrence from the CCB Chair who later receives the CCR to document /implement the permanent change. Urgent items will be reviewed by the next CCB meeting. Routine items will be reviewed as soon as the schedule permits.

(6) **Change Class --** Change Classes are either I or II. Class I will be handled by ESDIS-only because of cost, schedule, and/or mission impacts that may require requirements changes. Class II items do not affect mission requirements, but may have cost and/or schedule implications which affect maintenance, operations, procedures, documentation, site-tailored items, COTS implementation, site installations of core system changes, science SW changes, etc.

(7) **Status --** The following table is a summary of the CCR states maintained by the Distributed Defect Tracking System (DDTS) application SW database tool that implements the Change Request Manager. Note that the hard copy form will not be updated chronically, but will be kept in the master suspense file of the CM Administrator until closed-out with a stamp (item #7 & 15) and appropriate signatures (viz., items 16, & 17).

State Table Composition in DDTS format

State Code	Available States	State Assigned
S	Submit	Submitted
N	New	New
A	Assign-Eval	Assign-Eval
O	Assign-Implement	Assigned-Implement
R	Implement	Implemented
T	Assign-Verify	Assigned-Verify
V	Verify	Verified
C	Close	Closed
D	Duplicate	Duplicate
F	Forward	Forwarded
P	Defer	Deferred

Explanations of DDTS' State Table Content:

Uppercase character in the 1st column is the character stored in the change request record to indicate what state a change request is in. DDTS uses this character to go into the table and extract the descriptive name for display in reports.

Names in the second column is the state in the present tense. They are shown on the DDTS list of states that are available for selection during input. It's also used by some of DDTS' query and report code. It facilitates querying based on descriptive names opposed to a single letter.

Names in the third column is the state in the past tense. They are shown on the DDTS change request record. It's also used by some of DDTS query and report code. It facilitates querying based on descriptive names opposed to a single letter.

Definitions (a state is the stage that a proposed change has reached in its life cycle.):

New - the initial state for all newly entered change requests.

Assign-Eval- state entered when the change request is being assigned to an engineer for evaluation/analysis.

Assign-Implement- state entered when the change request is being assigned to an engineer for development.

Implement-state entered when the proposed change has been developed.

Assign-Verify-state entered when the developed change is being assigned to an engineer for verification testing.

Verify- state entered when a developed change has been tested and verified that it functions properly.

Close- state entered when all activity specified in the change request has been completed or that the approval authority has decided to close it prior to completion of all activity.

Duplicate-state entered when a change request is determine to be duplicate of an existing change request. Duplicate change request identifies change request being duplicated.

Forward-state entered when a change request needs to be forwarded to another DDTS defined project (In DDTS terminology, a project is a grouping of change requests. For example, a change request from a site project can be forwarded to an ECS project.).

Defer- state entered when activity on a change proposal has to be postponed.

(8) **CCR Title --** The CCR title is supplied by the originator.

(9) **Originator --** The originator name, organization, e-mail address, and phone number is given.

(10) **Approval --** The CCR is approved by the designated management authority which is assigned by the CCB. This sponsorship requirement acts as a primary filter to eliminate from consideration those CCRs that cannot be implemented or which have no ECS site management support.

(11) **Reason for Change --** The reason for the change is narrated on the form and/or the designated attachment.

(12) **Description of Change --** The proposed implementation of the change is narrated along with any known impacts, resources, and expenses to be incurred.

(13) **Impact Analysis --** Impact analysis is documented in the form of figure 9.2.4-3. The impact analysis is collected by the CCB Chair appointed Evaluation Engineer in coordination with the CM Administrator who maintains the CM records and assembles the review package for the CCB. The Evaluation Engineer documents the list of Impact Evaluators and derives and/ or verifies cost, technical, and schedule impact of the proposed change based on all inputs received. The results of the coordinated CCR Impact Analysis inputs are presented in the CCR Impact Summary form shown in figure 9.2.4-3 part of the CCR review package.

CCR Impact Analysis

Responder Request Number: ____
Responder:_____
Responder Point of Contact:
address:_____
_____
phone:_____
e-mail:_____
CCB Schedule Date:_____
CCR Number:_____
CCR Log Date:_____
CCR Originator:_____
CCR Originator Point of Contact:
address:_____
_____
phone:_____
e-mail:_____

Evaluation Engineer:_____
Evaluation Engineer Point of Contact:
address:_____
_____
phone:_____
e-mail:_____
Requested Return Date:_____

Rough Order of Magnitude (ROM) Impact Analysis

Basis of Estimate:

Technical Assumptions and Comments:

Cost Impact:
None [ ]
Small [ ] < $ 100, 000
Medium [ ] $100,000 < x < $500,000
Large [ ] > $500,000

Schedule Impact:

Technical Assessment: (Your impact analysis should consider the implementation approach; interfaces affected; HW or SW changes required; documentation changes required-- change from/to pages; suggested alternatives, if any; and impact to security features. If your system is not impacted, please provide that information to the CM Administrator.)

Comments:

Signed:_____
(Responder)

Date:_____

Figure 9.2.4-2. ECS CCR Impact Analysis

CCR Impact Summary

Evaluation Engineer:_____
Evaluation Engineer Point of Contact:
address:_____
_____
phone:_____
e-mail:_____
CCR Board Date:_____

Resources Summarized:

Technical Summary:

ROM Summary (BOE, Cost, and Schedule):

Recommendation:

Signed:_____
(Evaluator)

Date:_____

Figure 9.2.4-3. ECS M&O CCR Impact Summary

(14) **Comments** -- Comments are added to the CCR to summarize sites and/ or organizations affected by the CCR. Additional comments may address proposed CCB dispositions and recommendations to be indicated by resolutions in item #15.

(15) **Board Action --** CCB actions and follow-up actions that will be facilitated and tracked by the CM Administrator are indicated. Possible CCB dispositions are given as approved, withdrawn, disapproved, and deferred (pending follow-up activities by the indicated schedule date). Further actions are indicated as

Engineering Change Proposal (ECP)-- changed scope of contract requirements

Waiver-- declaration that certain contract requirements no longer apply

Deviation-- change of contract terms or substitution of terms or deliverable requirements

Technical Direction-- order by Contracting Officer's Technical Representative (COTR) to perform certain tasks within the scope of the contract

Contract Modification-- changes to the terms of a contract

Document Change Notice (DCN)-- notification of changes to published documents

Others-- Engineering Change Notice, Change Order, Escalate to higher CCB authority, etc.

(16) **CCB Approval** -- CCB approval signature authority by CCB Chair or designate.

(17) **CCR Implemented** -- This signature and close-out stamp (item #7) are executed by the CM Administrator witnessing the completion of the CCR implementation process which is tracked in the Change Request Manager automated tool DDTS and updated in Baseline Manager (XRP-II) for affected version control status changes.

9.2.4.2 Change Control Board Process (System and Site-level CCBs)

The ECS M&O organization will provide administrative and technical support services for the CCB at each site. Each site's CCB is controlled by the host site organization and provides the authority and direction for the ECS contractor to modify the operational baseline. The ESDIS CCB has chartered an ECS Review Board to coordinate ECS system-level changes and problem management via the Sustaining Engineering Organization (SEO) contractor and on-site Review Boards that also act as site CCBs. This is illustrated using the CM Administrator's workflow for the SEO support of the ECS Review Board in Figure 9.2.4-4 and the On-Site CM Administrator's workflow for SEO support of the on-site CCB in Figure 9.2.4-5. The problem management process was discussed in detail in Section 8 of this document. Both diagrams illustrate the flow of CCRs through the respective CCBs with inputs from the review boards and evaluators that determine the disposition of proposed changes. Details of this process are given below:

System-level Change Control Procedures

(The enumeration corresponds to the diagram of figure 9.2.4-4)

(1) Configuration Change Requests are received by the SEO CM Administrator from all sources with regard to the operational ECS Core System as described in Section 9.2.4.1. These changes

designated as from other sources could involve system enhancements, procedures, interfaces (both external and internal), documentation changes, etc. that are not the subject of contemporaneous problem reports which would be first deliberated by the Trouble Ticket Review Board (TTRB) and/ or Failure Review Board as explained below.

(2) Proposed common baseline changes will be proposed based on Trouble Ticket (TT) resolutions obtained from the respective review boards (see Section 8 for details). The respective TT would be closed via a corresponding CCR to either ratify, i.e., to make permanent the prior temporary/emergency action taken by the TTRB or to consider normal priority (scheduled) changes for incorporation into future change releases.

(3) The SEO CM Administrator is responsible for logging the CCR into the Change Request Manager (DDTS tool) as described in Section 9.8.

(4) The CCB chair assigns an evaluator and the SEO CM Administrator coordinates impact assessment.

(5) Class I change requests (proposed changes that affect controlled milestones, schedules, budget, cost and requirements) are forwarded to the ESDIS CCB for consideration with recommendations from the ECS Review Board.

(6) Class II change requests (proposed changes affecting documentation, hardware [alternative use of], software [correction of errors], and COTS substitution without a Class I impact) are considered by ECS Review Board deliberations.

(7) Notice of proposed changes is distributed to affected parties and review board members to obtain and coordinate impact assessment and optimize the approach to implement proposed changes.

(8) The results of ECS Review Board deliberations are factored into review board resolutions which determine whether, when, or where the system changes will be implemented.

(9) Approved changes are processed by the SEO CM Administrator to the support activities, i.e., site CCBs, support personnel (SEO), vendors, etc. who are provided with change orders, schedule, and implementation instructions.

(10) Disapproved changes are processed by the SEO CM Administrator via official notifications, memo to the file, and update of the Change Request Manager (CRM).

(11) The SEO CM Administrator tracks implementation and closure of CCRs via directions to implementing organizations and their acknowledgements using the CRM tracking and statusing features (see section 9.8).

(12) New versions and/or maintenance updates are annotated in Baseline Manager at the SMC and at the affected sites by following the procedures for configuration identification, activation dates, deactivations dates, and issuing version description documents.

(13) Simultaneously, the SW Change Manager (ClearCase) is updated with directory trees, installation files, and software as required by SW maintenance.

(14) Status of this activity to implement changes and assigned responsibilities is tracked through closure in the CRM at SMC and at the sites.

(15) The databases are synchronized by manual checking between applications Baseline Manager vs. CRM vs. SW Change Manager) and automated verification by the SW CM Manager for purposes of SW distribution and maintenance.

(16) The TT Review Board is empowered to make emergency fixes without common baseline changes and update these changes directly to Baseline Manager with documentation to follow via the CCR submitted to the appropriate CCB. Proposed common baseline changes must be submitted by CCR to the ECS Review Board.

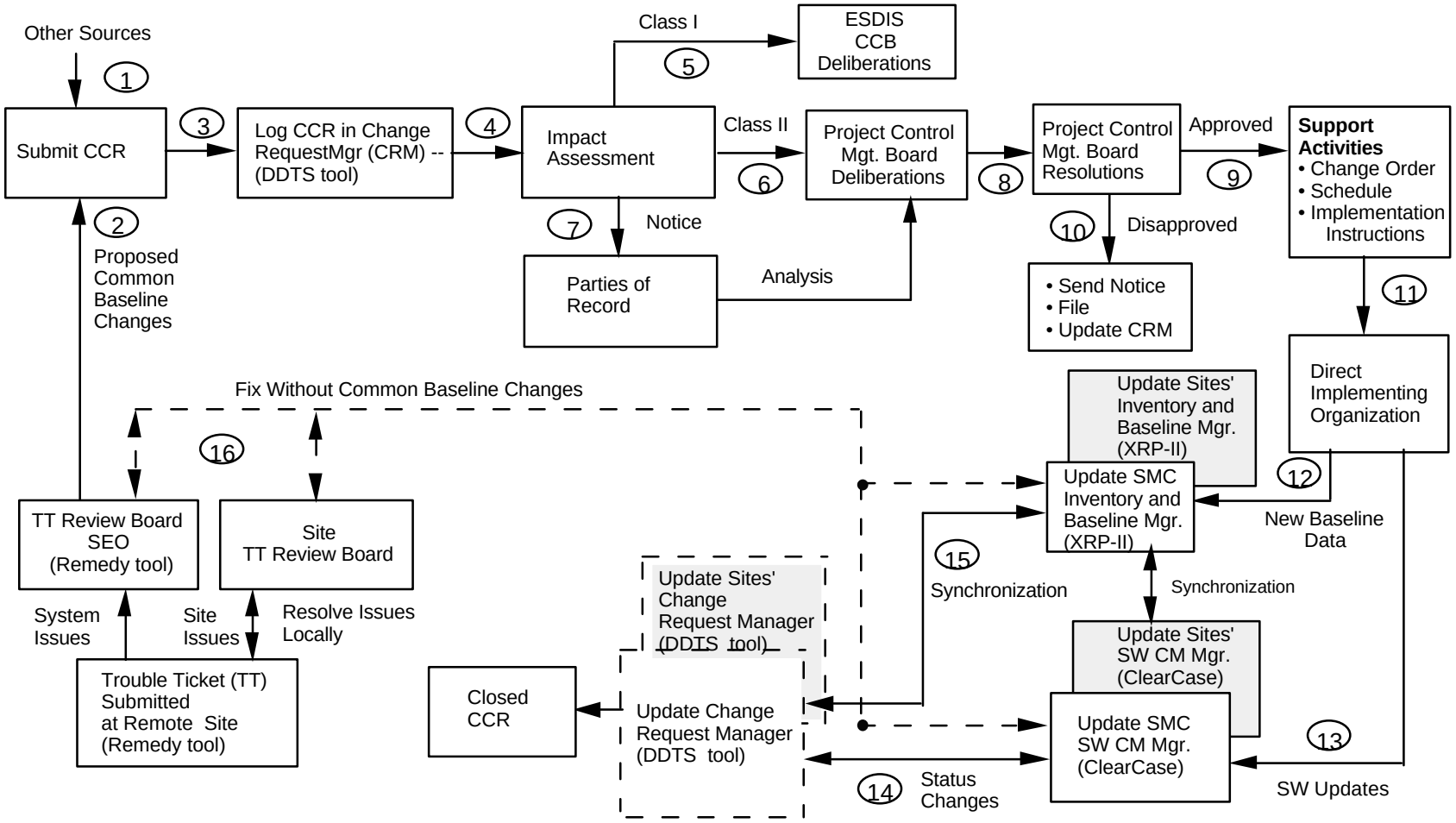


Figure 9.2.4-4. Work-Flow Diagram for SEO CM Administrator

Site-level Change Control Procedures

(The enumeration corresponds to the diagram of Figure 9.2.4-5)

(1) Configuration Change Requests are received by the Site CM Administrator from all sources with regard to the **site unique extensions** to the operational ECS Core System as described in section 9.2.4.1. These changes designated as from other sources could involve system enhancements, procedures, interfaces (both external and internal), documentation changes, etc. that are not the subject of contemporaneous problem reports which would be first deliberated by the Site/ SEO Trouble Ticket Review Board (TTRB) and/or Failure Review Board as explained below.

(2) Proposed site baseline changes will be proposed based on Trouble Ticket (TT) resolutions obtained from the respective review boards (see section 8 for details). The respective TT would be closed via a corresponding CCR to either ratify, i.e., to make permanent the prior temporary/ emergency action taken by the TTRB or to consider normal priority (scheduled) changes for incorporation into future change releases.

(3) The Site CM Administrator is responsible for logging the CCR into the Change Request Manager (DDTS tool) as described in Section 9.8.

(4) The CCB chair assigns an evaluator and the Site CM Administrator coordinates impact assessment.

(5) Class I/System Issues change requests (proposed changes that affect controlled milestones, schedules, budget, cost and requirements) are forwarded to the ECS Review Board for consideration with recommendations from the Site CCB. Class I issues are further forwarded with recommendations by the ECS Review Board to the ESDIS CCB for consideration.

(6) Class II change requests (proposed changes affecting documentation, hardware [alternative use of], software [correction of errors], and COTS substitution without a Class I impact) are considered by Site CCB deliberations.

(7) Notice of proposed changes is distributed to affected parties and review board members to obtain and coordinate impact assessment and optimize the approach to implement proposed changes.

(8) The results of Site CCB deliberations are factored into CCB resolutions which determine whether, when, or where the system changes will be implemented.

(9) Approved changes are processed by the Site CM Administrator to the support activities, i.e., other CCBs, support personnel (SEO), vendors, etc. who are provided with change orders, schedule, and implementation instructions.

(10) Disapproved changes are processed by the Site CM Administrator via official notifications, memo to the file, and update of the Change Request Manager (CRM).

(11) The Site CM Administrator tracks implementation and closure of CCRs via directions to implementing organizations and their acknowledgements using the CRM tracking and statusing features (see Section 9.8).

(12) New versions and/ or maintenance updates are annotated in Baseline Manager at the affected sites and the SMC by following the procedures for configuration identification, activation dates, deactivations dates, and issuing version description documents.

(13) Simultaneously, the SW Change Manager (ClearCase) is updated with directory trees, installation files, and software as required by SW maintenance.

(14) Status of this activity to implement changes and assigned responsibilities is tracked through closure in the CRM at the sites.

(15) The databases are synchronized by manual checking between applications Baseline Manager vs. CRM vs. SW Change Manager) and automated verification by the SW CM Manager for purposes of SW distribution and maintenance.

(16) The on-site TT Review Board is empowered to make emergency fixes without common baseline changes and update these changes directly to Baseline Manager with documentation to follow via the CCR submitted to the appropriate CCB. Proposed common baseline changes must be submitted by CCR to the ECS Review Board.

Each site's CCB accepts initial release or updates from the ESDIS CCB. Similarly, the Distributed Active Archive Center (DAAC) CCBs will accept product generation software from an ESDIS authority. Local tailoring and installation decisions are determined by the site CCB.

In the case of Evaluation Package (EP) and Prototype deliveries, the ECS CCB as directed by ESDIS will provide a configured, documented, executable with supporting files. Again, installation decisions are determined by the site CCB.

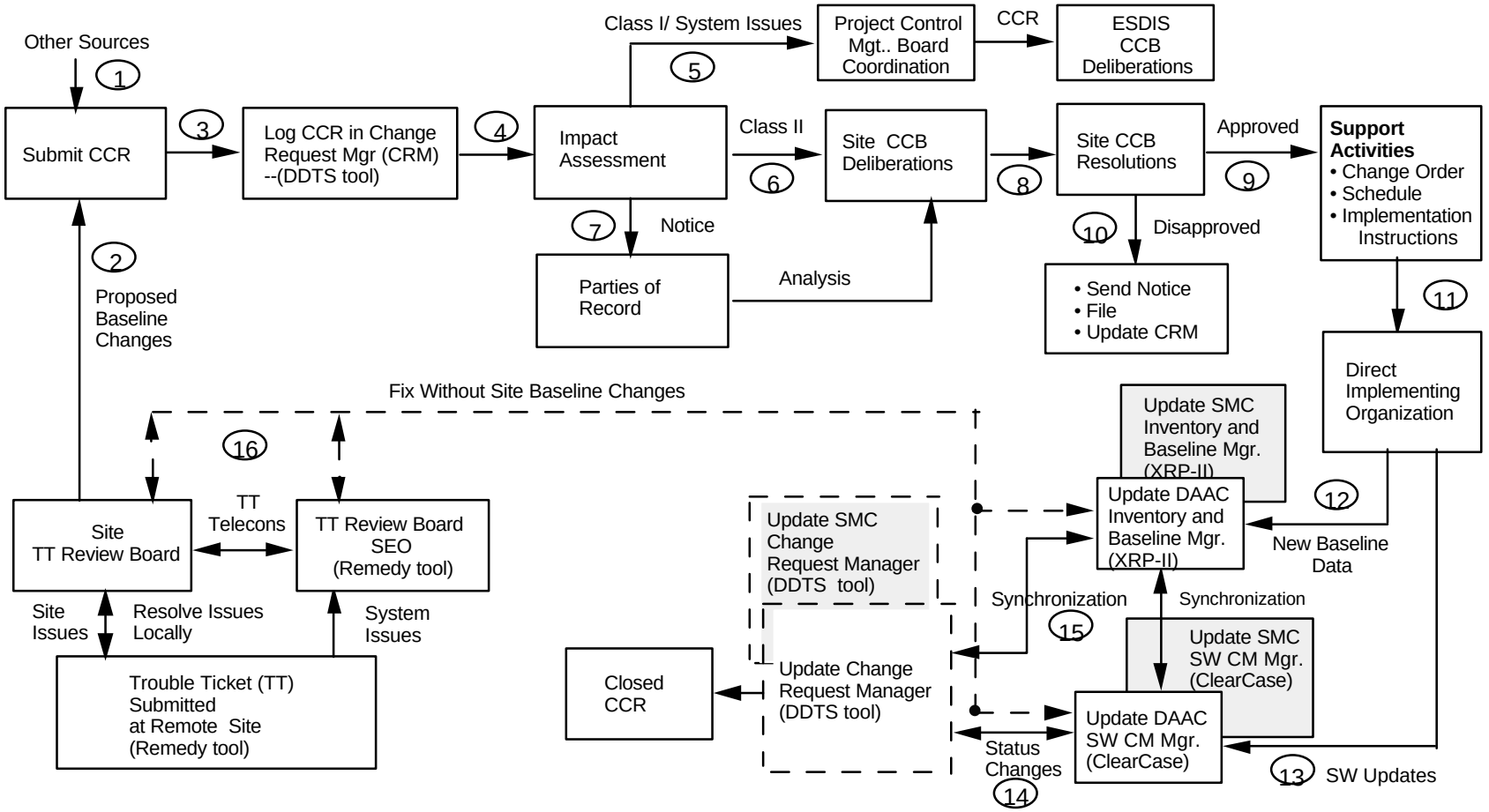


Figure 9.2.4-5. Work-Flow Diagram for Site-level CM Administrator

Each Science Computing Facility (SCF) is assumed to have a configuration control function. For commonality with other sites, it is assumed that this function will be performed by a CCB. A major difference, though, is the ECS contractor does not have an active role in the support of this CCB.

The SCF CCB will provide two types of configuration control:

(1) Configuration control of software and databases that are to be executed in another site's environment. In this mode, it operates very much as the ECS CCB does to establish a product baseline.

(2) Configuration control of SCF resources that are made available to the EOSDIS community. In this mode, its functions are the same as a DAAC CCB.

The ECS M&O CM function at each DAAC will accept science SW and data items from the SCF CCB. These items will be incorporated into the DAAC's operational baseline as directed by the DAAC CCB.

The EOC CCB will control the operational configuration of the required EOC operational baseline. ECS M&O CM will provide services as directed by the CCB.

The ECS Review Board will be charged with the responsibility for centralized coordination and control of ECS CM activities to ensure:

- ECS integrity and quality of service
- Successful coordination with both internal and external networks, systems, and on-site facilities
- Timely ESDIS CCB visibility into and oversight of ECS operations
- Convenient user administrative services

9.2.4.3 Configuration Control - Deviation and Waivers

1. Prior to completion of software development or to purchase of equipment or software, a Deviation from the specification may be granted by the ESDIS CCB.
2. Subsequent to the completion of development or delivery of equipment or software, a Waiver of specific requirements may be granted in order to accept defined nonconforming items. The waiver is traceable to a nonconformance report. A waiver is limited: additional deliveries of like items must conform to approved requirements .
3. Departures from expected configurations that are not at variance with customer-approved requirements are handled as Nonconformance Reports.
4. A request for a Deviation or Waiver consists of a Deviation/Waiver Form shown in figure 9.2.4-6 attached to a CCR form .
5. Instructions for completing the form are listed below. Additional pages should be attached as necessary.

Dev or Wai: Check the applicable box in accordance with the definitions given on page 1 of this Instruction.

Waiver Number: Assigned by ECS CM Administrator

Title: Enter a brief descriptive title. The title should be a statement, e.g., "Accept x in lieu of y".

Reason: Describe the reason for the deviation or waiver. This may also include the history of the problem and consequences of not implementing the deviation/waiver.

Existing Requirement: Specify and describe the baseline from which the deviation or waiver departs.

Departure: Give instructions for the deviation or waiver with reference to the requirement.

Implementation Scope: Include as appropriate, configuration item number, model no., supplier, subcontractor, series, serial numbers, order no., location, release number, quantity, time period or other criteria delimiting the deviation or waiver.

Documents Affected: List current release number(s) of affected document(s).

6. The Deviation or Waiver CCR is prepared in accordance with the instructions in section 9.2.4.1 with the following exceptions:

   Change Class: All deviations and waivers are change class I because they depart from approved requirements and must be approved by the ESDIS CCB.

   Description (Title): The title of the CCR will be the deviation or waiver title.

   Proposed Solution: Enter "See Attached Deviation/Waiver form ."

7. Waiver and Deviation CCRs are submitted to the ECS CCB. Upon ECS CCB approval, the CM Administrator forwards the CCR to ESDIS CCB for authorization to implement the deviation or waiver.

8. When the deviation or waiver is authorized, the ECS CM Administrator immediately distributes the authorization information to the appropriate implementors and issues a document change order (DCO) to the Document Management Organization.

9. The SEO Librarian copies the implementation instructions into the List of Deviations and Waivers at the front of the document and inserts the Deviation/Waiver number and effectivity at the point of applicability within the document.

10. Approved deviations/waivers are published via Document Change Notices (DCNs). Adding the deviation/waiver information to the document makes its status general knowledge. However, the deviation or waiver is in effect as soon as it is authorized by the customer .

11. A change in scope, effectivity or closeout, or any other change in a deviation or waiver requires a new CCR. The closeout or change is applied to the document via a Document Change Order in the same procedure as given in paragraphs 7 through 10.

ECS Deviation / Waiver

Deviation/Waiver No.	Deviation ☐ Waiver ☐	Date:
NCR No.		
Title:		
Reason for Deviation / Waiver:		
Existing Requirement: (attach pages as needed)		
Departure: (attach pages as needed)		
Implementation Scope: (Identify CI, model, supplier, subcontractor, series, order no., location, release, time period, etc. as applicable)		

Document No.	Page/Paragraph Reference	Document Title

CM05MR95 ***ECS***

Figure 9.2.4-6. Deviation/Waiver Form

9.3 Configuration Status Accounting Procedures

9.3.1 Purpose

Operational phase configuration status accounting (CSA) consists of recording and reporting information about the configuration status of the ECS Project's documentation, hardware and software throughout the Project life cycle. Periodic and ad hoc reports keep ESDIS informed of configuration status as the operational mission evolves. Reports to support reviews and audits will be extracted as needed starting from the RRR.

The Baseline Manager tool described in section 9.9 records and tracks as-built products designated as ECS control items (i.e., custom, COTS, science, toolkits, etc. SW and HW items along with their associated documentation and records) and historical versions of ECS operational configurations. Baseline Manager, which is updated with the acceptance tested version of the ECS baseline at RRR, records and reports M&O document change status and histories, mission milestone baselines, and change status.

CSA entails maintaining version histories of delivered and maintained products as well as histories of operational baselines and changes made to each baseline. Additionally, CSA tracks the status of proposed changes from initial CCR submission to ultimate disposition and/or implementation. CSA also maintains historical records of CCRs.

9.3.2 Applicable to

All ESDIS chartered CCBs.

9.3.3 References

ESDIS CM Plan

ECS M&O CM Plan

9.3.4 Procedures

The following are topical items subject to periodic or ad hoc reporting on behalf of the respective CCB or a system-level summary of information that will be reported by the SEO CM Administrator representing the operational baseline for all the ECS sites.

(a) **New CCRs and Revisions.** This is a standard Change Request Manager report (cf. Section 9.8). This report will be issued monthly and summarized annually.

(b) **CCB Review.** Distribute CCR copies for review (and Impact Analysis forms if applicable). Print the agenda and distribute prior to the meeting.

(c) **Open Action Items.** Open action items should be statused regularly between meetings.

(d) **CCB Meeting.** Record the CCB's disposition of each CCR.

(e) **Record Action Items.** Record actions, assignments, and due dates.

(f) **SEO Librarian Maintained Document Changes.** When all authorized document changes have been accomplished prepare DCN, post the final version on the ECS Document Data Server and distribute hardcopy as required.

(g) **Minutes Distribution.** Distribute minutes to the standard distribution and inform actionees of assigned action items.

(h) **CCR Implementation Status.**

- After CCB disposition, regularly status open CCRs until closure.
- Class I events include: CCR to ECS Review Board for review/appoval; Technical Review Board; and ESDIS Disposition
- Further events are as follows for M&O implementation status: Consent Obtained; Item Received; Installed; Document Completed; etc.
- CCR CLOSED: A Class I CCR is not closed until the ESDIS contract officer's authorization is received or the reference CCR has been withdrawn.
- Class II document change CCRs may be closed with the CM Administrator's issuance of the DCN.
- Other non-document change CCRs may be closed when the originator verifies to the CM Administrator that all specified changes have been implemented.

9.4 Configuration Audits

9.4.1 Purpose

SEO will support Functional Configuration Audit /Physical Configuration Audit (FCA/PCA) by IATO at RRR. SEO will also support audits by ESDIS and our own Quality Office functions. Internal CM self-audits will be conducted by the SEO. Self-audits evaluate the Project's compliance with the EOS Configuration Management Plan and the ESDIS CMP. The CM self-audits will verify:

- That CM policies, procedures, and practices are being followed.
- That approved changes to documentation, and to software and hardware products are properly implemented.
- That the as-built documentation of each CI agrees with the as-deployed configuration or that adequate records of differences are available at all times.

A post-audit report is written outlining the specific items audited, audit findings, and corrective actions to be taken. All action items are tracked to closure.

In addition, SEO supports formal audits scheduled and conducted by ESDIS. These audits are conducted to validate that each ECS CI is in conformance with its functional and performance requirements defined in the technical documentation. The audits validate that:

- The as-built configuration compares directly with the documented configuration identification represented by the detailed CI specifications.
- Test results verify that each ECS product meets its specified performance requirements to the extent determinable by testing.
- The as-built configuration being shipped compares with the final tested configuration. Any differences between the audited configuration and the final tested configuration are documented.
- When not verified by test, the compatibility of ECS products with interfacing products or equipment is established by comparison of documentation with the interface specifications which apply.
- COTS products are included in audits as integral parts of the ECS baseline.

9.4.2 Applicable to

All ESDIS chartered CCBs.

9.4.3 References

ESDIS CM Plan

ECS M&O CM Plan

9.4.4 Procedures

The audits willl be standardized for a limited set of issues that drive the process for which the audit is taken, viz., FCA/PCA, Security Issues, General Accounting, Test Readiness Review, or Operational Certifications. The documented basis for the audit process will be maintained in the Baseline Manager CM tool (cf. Section 9.9). Alternatively, the Version Description Document (VDD) will be used to document auditable changes to configured articles that are issued at the ECS configuration item (CI) level. The use of the VDD is discussed in the ECS M&O CM Plan. The VDD will contain the prioritized current status summary of any Trouble Tickets/Discrepancy Reports against the CI that is being issued per the change request.

Some general guidelines and/or items that must be tailored for the specific size and scope of configuration audit to be conducted include:

(a) Audit Plan;

(b) Conference Agenda;

(c) Location to collect and analyze data; conduct meetings;

(d) Applicable specifications, drawings, manuals, schedules, design and test data;

(e) Test Results Analysis;

(f) Meeting minutes including resulting audit action items;

(g) Tools and inspection equipment necessary for evaluation and verification;

(h) Unencumbered access to the areas and facilities of incoming inspection, fabrication, production, and testing;

(i) Personnel from each engineering, production, and quality department to be available for discussion of their respective areas;

(j) Copies of inspection reports, process sheets, data sheets, and other documentation deemed necessary by the Government FCA/ PCA teams; and

(k) Isolation of the item(s) and detailed parts to be reviewed.

9.5 Data Management

9.5.1 Purpose

The term "data management" pertains to two activities. The first pertains to the activities of the Data Management Organization (DMO) within the ECS project. The second, broader in scope, includes all organizing and use of documents and data across the ECS project. This procedure describes the DMO activities fully. In addition, certain activities that are material to the data management of the project are described in this procedure although they are performed by organizations other than the DMO.

This procedure describes:

- the policies and procedures that apply to data handling and document distribution.
- requirements for data management for the ECS project.
- the role of the data base administrator .
- the use of data control and data handling systems (Document Data Handling Subsystem (Section 20).
- the activities pertaining to establishing and maintaining system libraries and records.
- management of data required during operations readiness review, missions operations, and certification and to assist the on-going development of the system for design, implementation, and test.
- how data will be collected, maintained, and made available to the development team and for distribution to the NASA.
- the data management functions of controlling document masters, preparing change pages, and keeping auditable change records.
- the plan for controlling the data base structure, controlling the interfaces to the data base, establishing the data base security, and evaluating data base performance.

This procedure does not cover the handling or use of notes, test data, software, financial information, or draft documents that would generally be characterized as working papers or other

non-controlled and non-deliverable information. This information is handled by the contractor Integrated Management Information System (IMIS).

9.5.2 Applicable to

All ECS Sites CM Administrators and the SEO Librarian

9.5.3 References

ECS Data Mangement Plan

ECS Documentation Management and Control	DM-1-001
Documentation Numbering	DM-1-002
CDRL and Required Document Generation, Review, Release, and Maintenance	DM-1-004
Electronic CDRL Preparation and Delivery	DM-1-005
CDRL Document Format	DM-1-006
Document Delivery and Dissemination	DM-1-007
ESDIS/ECS Review of Contract Required Data	DM-1-008
ECS Documentation Storage	DM-1-009
Document Archiving	DM-1-010
Technical and White Paper Generation, Review, Release, and Maintenance	DM-1-013
Electronic Storage and Distribution of ECS Documentation	DM-1-014

9.5.4 Procedures

The following text describes standard data management procedures and methods to be used by the ECS project. Occasionally special circumstances may arise which call for exceptions and flexibility to the customary procedures.

9.5.4.1 Information Preparation, Submittal, & Cataloguing

9.5.4.1.1 Creation/Preparation

The originator / author (usually engineering) will create all source material (text, graphics files, etc.) per CDRL/DID preparation instructions and be accountable for the accuracy of its content. Publishing will assist the author by providing Word Processing and Graphics support such as templates and fonts. (Publishing will do the final formatting later.) The DMO will provide the appropriate CDRL numbering and DID instructions.

9.5.4.1.2 Submission

The originator / author will submit all source material (text, graphics files, etc.) to the DMO electronically including necessary metadata descriptors. The latter include reference to source documents and dates.

The Data Management Office verifies delivery schedule with the appropriate task manager prior to a scheduled release or CDRL delivery date. The DMO notifies the responsible organization at the Program Office Weekly Status Report of upcoming CDRL items and their delivery dates, any special preparation instructions, formats, title pages, signature approvals, and any other pertinent information. Copies of the ECS Master Schedule are provided at the Weekly Status Review.

9.5.4.1.3 Identification and Numbering

Data Identification. Upon receipt of information, the SEO Librarian assigns a DMO identification number to each pertinent type of program data created for the ECS program. If appropriate both SEO and NASA numbering are assigned at this time.

9.5.4.1.4 Logging/Cataloguing

The DMO verifies proper submission of information into the system including valid numbering, manually making changes if necessary, and provide supplementary cross-references as part of the data base catalogue. DMO also updates the status log for those submissions that were pre-scheduled.

9.5.4.2 Information Review, Signoff, Release, and Change/Revision

9.5.4.2.1 Document/Test Data Review, Release, and Change Procedures

(ESDIS/ECS Review) of Contract Required Data (DM-1-008)

9.5.4.2.2 Review/Release

Prior to its release, each CDRL document will be reviewed and signed off by each of the participating functions involved (e.g., engineering, product assurance, systems engineering) as depicted in Figure 9.5.4-1. Only when all the proper signatures have been obtained will the document be released and distributed.

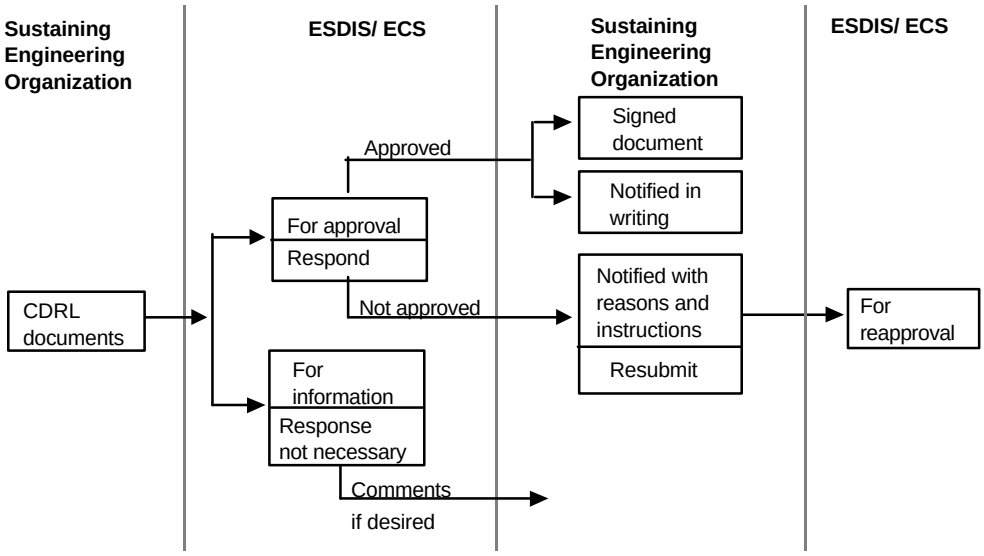


Figure 9.5.4-1. CDRL Item Submission Criteria Flow

The DMO will verify that review and signoff has been completed and annotate the status log for the respective information accordingly.

Data Control Procedures:

1. Data Item Scope, Content, and Format
2. Data Item Submittal (Schedule and Distribution)
3. Data Item Use of Common Information
4. Data Not Duplicated
5. Data Item Quality Control and Assurance
6. Data Item Approval
7. Internal Data
8. Data Items Rework
9. Recorded Information

9.5.4.2.3 Changes, Revision, and Document Maintenance

Changes to controlled documentation come under control of the appropriate Change Control Board (CCB) and details concerning the procedure are to be found in the Configuration Management Plan. In summary, once the author (usually engineering) and the CCB agree on a change, the DMO is mandated to reflect the change in the data and documents. Changes to other data come under control of the appropriate task manager.

Once information is released, no changes will be permitted except upon the instruction of the appropriate authority (CCB or task manager). Changes to specifications are submitted to a formal change review board, which repeats the review/approval process (described above).

The DMO receives the document with approval signatures and reviews for compliance with the SOW, DID, and other contractual requirements. If found to be deficient, the document is returned to the author for corrections.

Revision and resubmission of any CDRL item will be subject to the same submission criteria as applied to the initial release of the document. The DMO will store a file copy and include information about updates in the next status report. The DMO will maintain a detailed data catalog and provide, as requested, specific indices that include document revisions and issue dates.

9.5.4.3 Information Distribution and Submission to ESDIS/ECS

9.5.4.3.1 Data/Document Distribution/Submittal to ESDIS/ECS

ESDIS/ECS will receive preliminary versions of data for comments prior to final release. After data in final form is received and cataloged, the DMO will reproduce the data, if necessary, and make distribution in accordance with CDRL/DID instructions and 500-TIP-2601 delivery interchange standard. The DMO will maintain special distribution lists (sorts) for any requirement that may occur. For documents transferred electronically, the Document Data Server Subsystem will encode and transmit the documents to ESDIS/ECS and will prepare and deliver a backup disk or tape for each document in the appropriate format.

All contractual data submitted to ESDIS/ECS, both engineering and non-engineering, will have a standard transmittal sheet attached. This sheet will contain key information about the data being submitted, such as data number, description, submission criteria, format.

9.5.4.3.2 Categories of CDRL Data Submitted to ESDIS/ ECS

All CDRL data submitted to ESDIS/ECS will be classified as being *for information* or *for approval.*

1) For Information. – Routine documentation which will be evaluated by ESDIS/ECS to determine current program status, progress, and future planning requirements. Examples of *for information* documents include status reports and programs management directives. *For information* documents shall be sent to ESDIS/ECS as soon as approved and issued by the SEO. ESDIS/ECS may elect to provide comments, although a formal ESDIS/ECS response is not required.

2) For Approval. – Documentation that requires written approval from ESDIS/ECS before its acceptance, distribution, and intended use. Examples of *for approval* documents include all documentation that is required to come before a CCB. ESDIS/ECS will approve the document or ask for resubmission at ESDIS/ECS Program Office. Provisions will be made for ESDIS/ECS signature on the cover of documents submitted for approval. If the document is approved, ESDIS/ECS will sign and return the document and notify SEO in writing of the approval. If the

document is not approved, within a mutually agreed time, ESDIS/ECS will notify SEO of those parts of the document which cannot be approved, together with the reasons and instructions concerning resubmission of the document. If the ESDIS/ECS evaluation reveals inadequacies, ESDIS/ECS will inform SEO of the parts of the document that require alterations, recommend actions, and give resubmission instructions according to the character of the inadequacies. SEO will resubmit the document to ESDIS/ECS for approval after receipt of ESDIS/ECS's notification.

9.5.4.3.3 Documentation Distribution

The DMO will prepare approved CDRL(s) transmittal letters. The DMO will reproduce copies of the letter and data package as required by the CDRL, ship it to those on the approved distribution list, and provide internal distribution as appropriate.

9.6 Archiving Procedures for the SW CM Manager (ClearCase)

9.6.1 Purpose

These instructions establish Configuration Management procedures for the backup of ClearCase Version Object Base (VOB) data, Views, and data delivered to the customer.

9.6.2 Applicable to

All ECS CM Administrators, SW Maintenance Engineers, and Sustaining Engineers

9.6.3 References

Configuration Management Plan for the ECS	101-102-MG1-001
CCB Processes	CM-1-004
Configuration Control of Formal Track Software	CM-1-010
Configuration Control of EP Software	CM-1-016
Configuration Control of Prototype Software	CM-1-018
Software Development Library	CM-1-019
EDF Configuration Control	SE-1-002

9.6.4 Procedures

DEFINITION — ECS Development Facility (EDF) - the software development environment including data, hardware, software, networks, facilities, and procedures used to support ECS software development and testing.

Software - for the purpose of this instruction, software includes all ECS-developed application software, COTS software, build and environmental instructions, and databases used in the execution of these products.

Segment-level - for the purpose of this instruction, segment-level includes all software development undertaken in the EDF by ECS segments from the initiation of software coding through completion of segment integration and test (I&T).

System-level - for the purpose of this instruction, system-level includes all ECS integration and test activities beginning with installation of segment software in the system I&T files.

Software Development File - a repository for a collection of material pertinent to the development or support of software.

Thread - a set of components (software, hardware, and data) and operational procedures that implement a scenario, portion of a scenario, or multiple scenarios.

Build - An assemblage of threads to produce a gradual buildup of system capabilities.

VOB - Version Object Base. Secure, permanent, mountable file system. Repository for storage of version-controlled data.

View - A unique workspace management or "sandbox management" that provides developers with transparent, file-level access to any version of any element through the use of dynamically-evaluated, user-specified version selection rules.

GENERAL

1. System Administrators maintain a backup for all ECS systems. This procedure documents an additional backup procedure for only ClearCase-specific data. This process is in parallel with System Administrator procedures. ClearCase, the ECS level software tracking tool, contains within itself a number of repositories called Version Object Bases (VOBs). These VOBs maintain all versions of all software elements developed for the ECS project. Additionally, there are disk areas known as Views, which contain file(s) that may be newly created or modified but not yet given or returned to ClearCase control.

2. It is critical that these repositories, VOBs, and Views get backed up synchronously on a daily basis, and that the backup tapes be maintained in such a way as to guarantee their restoration to the system in the event of a catastrophic failure. A View may contain files that were checked out of a ClearCase VOB, modified, but not yet checked back in when the failure occurred. This CM archive procedure uses synchronization techniques to ensure that no data is lost. The System Administrator's procedure does not include these techniques.

3. Current system and network configurations prohibit the installation of the View storage area on the developers'/ maintainers' personal workstations. As a result, Configuration Management has assumed the responsibility of backing up the View storage areas from the ClearCase server. However, once the developers/maintainers are provided with workstations that permit the installation of a private View storage area, this responsibility will be shifted to the developer/maintainer.

4. All ECS software is delivered electronically and via magnetic media. Copies of the exact magnetic media that were delivered are made and stored similarly to in-house generated backup tapes.

5. Backups of VOBs and Views are accumulative rather than incremental. Therefore, each tape has all data contained on previous archive tapes plus new files created, modified, etc.

6. A tape set consists of 31 archive tapes. The tapes are numbered from 1 to 31, a tape for each day of the month.

7. All software CM personnel will be familiar with the archive procedures.

8. All tape backup and archives are performed on Triton.

INSTRUCTION

1. A Software Configuration Management person will be assigned the responsibility for tape backup and archives. Daily backups are created every day at 03:30 a.m. via a UNIX cron job. Every workday morning the assigned Software CM person will perform tape archive procedures.

2. The daily backup tapes are obtained from and maintained in a fireproof safe which is kept locked. Key CM personnel hold the combination to the safe. The most current tape (the tape corresponding with the day of the month) is removed from the Triton tape drive and is always placed in the slot farthest to the left in the location marked "Current Backup". The tape corresponding to the day of the month for the next day is inserted into the tape drive.

3. On the first business day of each week the backup tape from the last business day of the previous week is given to System Administrator personnel for transportation to an off-site storage facility. Periodically the tapes stored off-site are returned to CM for reuse.

4. All tapes will be labeled with the type of data contained. In the case of delivered software, this will include, at a minimum, the title and version of the delivery, the tool used to generate the tape, and the date made.

   Example of a routine weekly backup tape label:

   Weekly Clear Case Backup Tape

   VOBs and Views

   For week ending: 01/06/94

   Tar formatted.

Person Performing Backup:

Example of a Deployed Software Tape:

194-904-DV3-002

Label: PGS TK2 Test Drivers Date: April 29, 1994

Test_drivers.tar 2gbyte format

Command to copy file to disk: dd if=## of=file.tar
Command to untar tar file: tar xvf file.tar
where ## = your tape device and file.tar = Name you give tar file

5. During weekends and holiday periods the tape for the next workday will be placed in the tape drive on the last workday prior to the weekend/holiday. This tape will be written to on all days prior to the next workday. In this case should the system crash over the weekend/holiday period, there will be a more up-to-date backup. For example, on Friday, Monday's tape would be placed in the drive. This tape will be written to on Saturday, Sunday, and Monday due to the automated cron job. Should the system crash on Saturday after 03:30 a.m., there would be a backup from Saturday available rather than Friday. On Monday this tape would be removed and replaced with the tape for Tuesday.

6. This process does not archive personal view storage areas resident on personal development workstations (see General 3., above). Therefore, when personal development workstations are assigned, files checked out of ClearCase and under modification are not backed up. The System Administrator can back up these workstations. The user can request through the Help Desk that his development workstation be scheduled for System Administration backup. Alternately, personal backup procedures can be initiated.

7. At the time the tar file for software delivery is created, a second delivery tape will be generated in accordance with delivery procedures. This archive copy will be given to System Administrator personnel for transportation to the off-site storage facility. Incremental delivery tapes will be created, documented, and stored in accordance with this procedure. Delivery archive tapes will be stored for the life of this contract.

9.7 SW Transfer and Installation

9.7.1 Purpose

This procedure involves transferring a Sustaining Engineer Organization (SEO)-developed software maintenance change package from the SMC to a remote site (a DAAC) and later installing the ECS custom software on a selected host computer under a configuration management controlled process. The procedure begins when the SMC Configuration Management Administrator receives the software maintenance change from the SEO and directs transfer to a designated DAAC drop-off point (SEO on-site SW library). At the DAAC, the installation actions are executed by the site sustaining engineering SW Maintainer under direction from the DAAC Configuration Change Board (CCB).

9.7.2 Applicable to

All ECS sites' Sustaining Engineers, System Administrators, CM Administrators, and Maintenance Engineers.

9.7.3 References

- Software Distribution Scenario, 604-CD-002-001, 305-CD-029-001 (modified)
- COTS Software Upgrade Scenario, 604-CD-002-001, 305-CD-029-001 (adapted)
- M&O CM Plan, 102-CD-002-001
- Developed SW Maintenance Plan, 614-CD-001-002

9.7.4 Procedures

9.7.4.1 Overview

This procedure details the transfer of SW changes under CM control from the ESDIS CCB using SMC resources to distribute maintenance changes to the sites (nominally, to a DAAC). The flowcharts of figure 9.7.4-1 (transfer) and figure 9.7.4-2 (installation) detail the sequence of events involved in the delivering, testing, and installing of SW maintenance releases.

Assumptions:

- The SMC storage software will be ClearCase.
- The baseline records will be maintained in the Baseline Manager (XRP-II tool)
- The SMC transfer of software will be via tar tape or File Transfer Protocol (FTP) for Release A; will be upgraded to Tivoli Courier (Release B)
- The transfer-storage point will be the SEO on-site SW library.
- The Software Maintenance Change package is relatively small and requires no special build/test procedures.
- Resource Planning, Mode Management, and other issues are not addressed in this scenario.

Summary of Procedures:

- CM Process defined Changes to be incorporated by SEO into ECS Operational Baseline
- SW received at SMC from SEO CM Administrator
- Baseline changed via Baseline Manager (XRP-II tool)
- Packaged via ClearCase
- Transferred via tar tape or File Transfer Protocol (FTP) for Release A; will be upgraded to Tivoli Courier (Release B)

- DAAC CCB Approves the Installation of SW Change Package into DAAC Operational Baseline
- SW Change Package Installed at DAAC on selected host computer

Software Transfer & Install
Functional Flow I (Transfer)

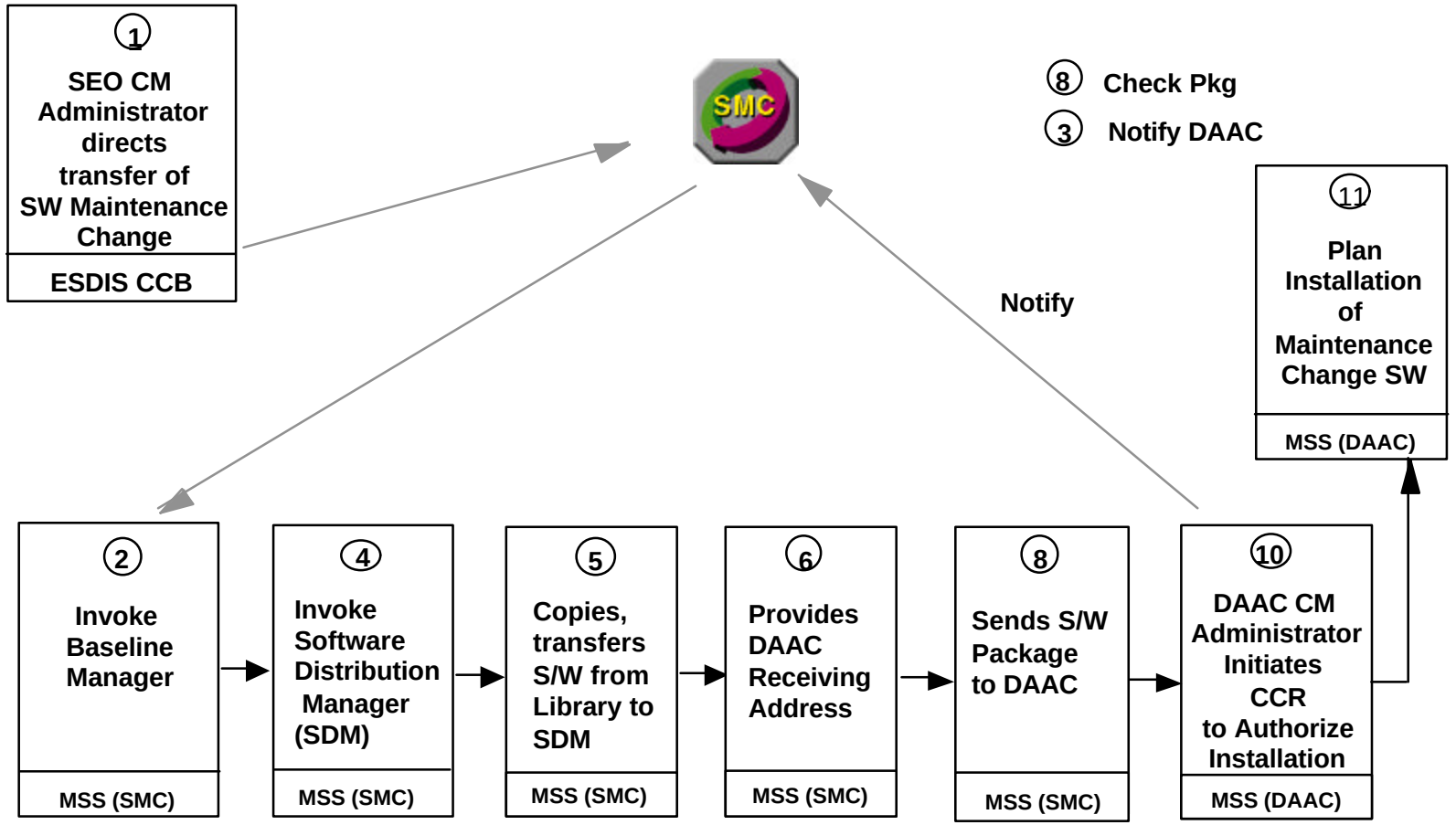


Figure 9.7.4-1. SW Transfer Functional Flow

Software Transfer & Install
Functional Flow II (Install)

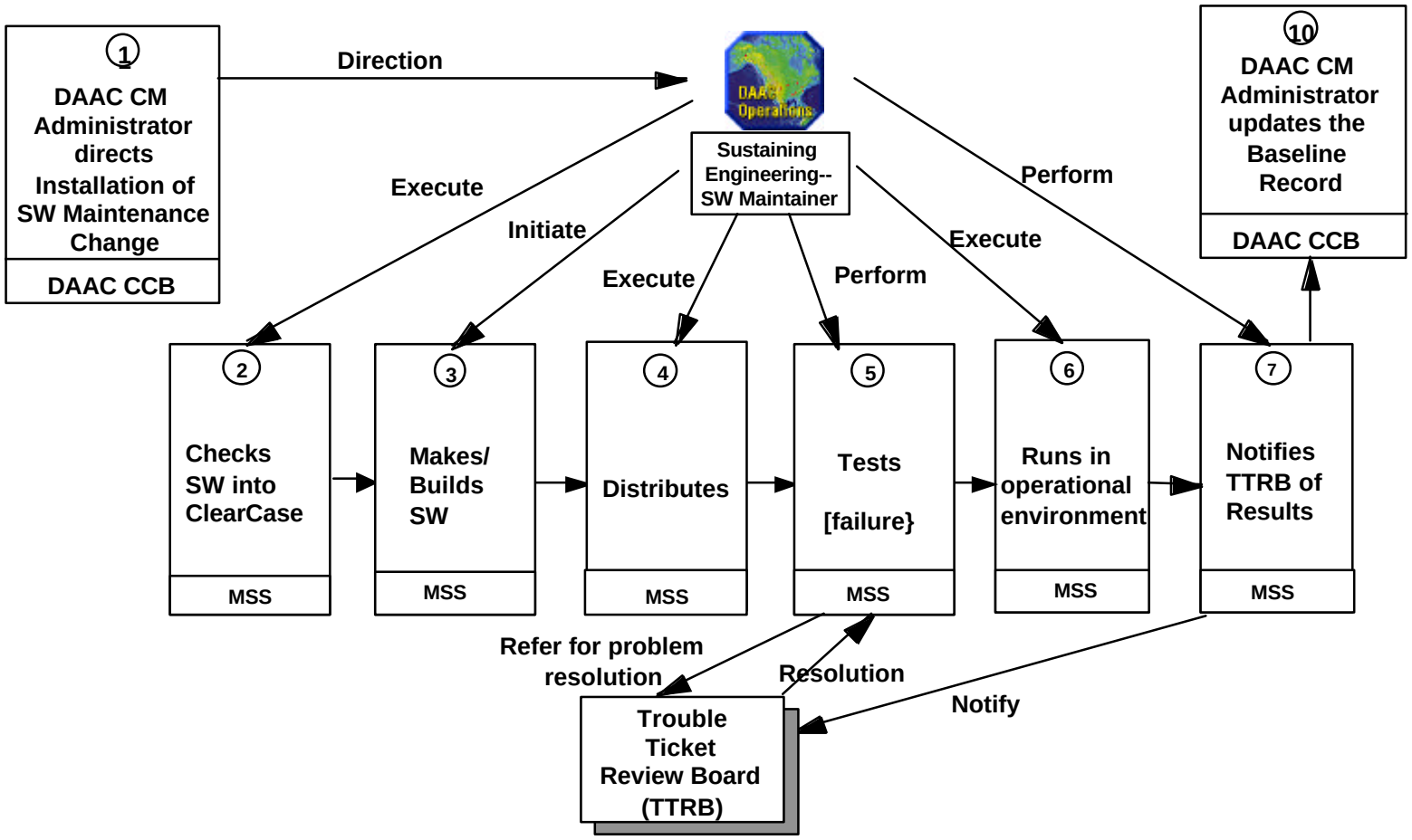


Figure 9.7.4-2. SW Installation Functional Flow

9.7.4.2 Operator Roles

SEO CM Administrator--Ensures that changes to the hardware, software, and procedures are properly documented and coordinated. Maintains control of all configured hardware and software.

SMC CM Administrator--Provides ECS system-wide configuration management and exercise control and/or monitoring over the configurations.

DAAC CM Administrator--Ensures that changes to the hardware, software, and procedures are properly documented and coordinated. Maintains control of all configured hardware and software. Assists in the development and administration of the library with respect to configuration management procedures.

DAAC Sustaining Engineering--SW Maintainer--Produce, deliver, and document the corrections, modifications, and enhancements made to ECS software (including COTS), and/or adapt or incorporate COTS software for ECS use.

9.7.4.3 Detailed Procedures

The following figures are a three part Point of View chart that steps through all the procedure and showing how all relevant roles interact.

Software Transfer & Install
Points of View I (Transfer)

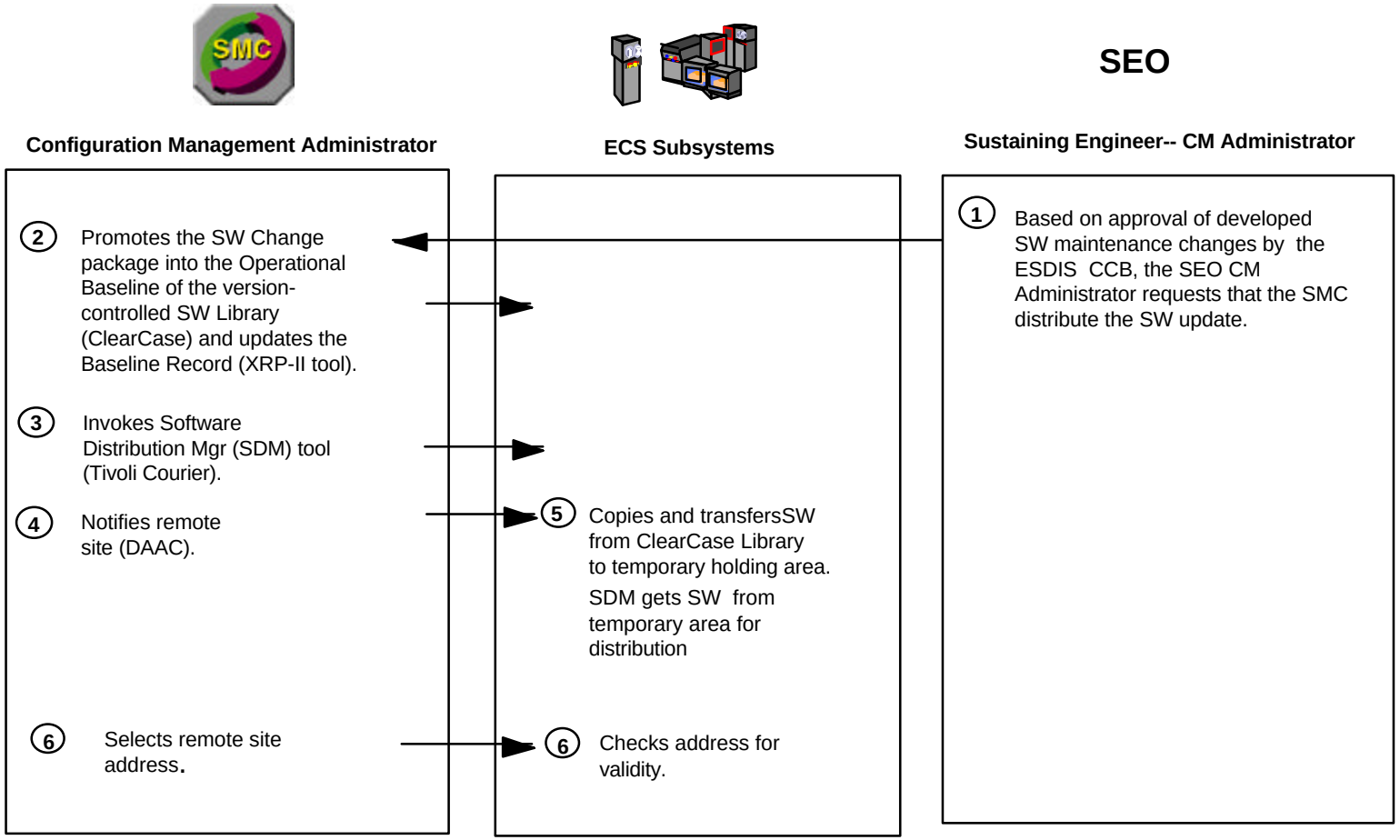


Figure 9.7.4-3. Detailed Points of View

Software Transfer & Install
Points of View II (Transfer)

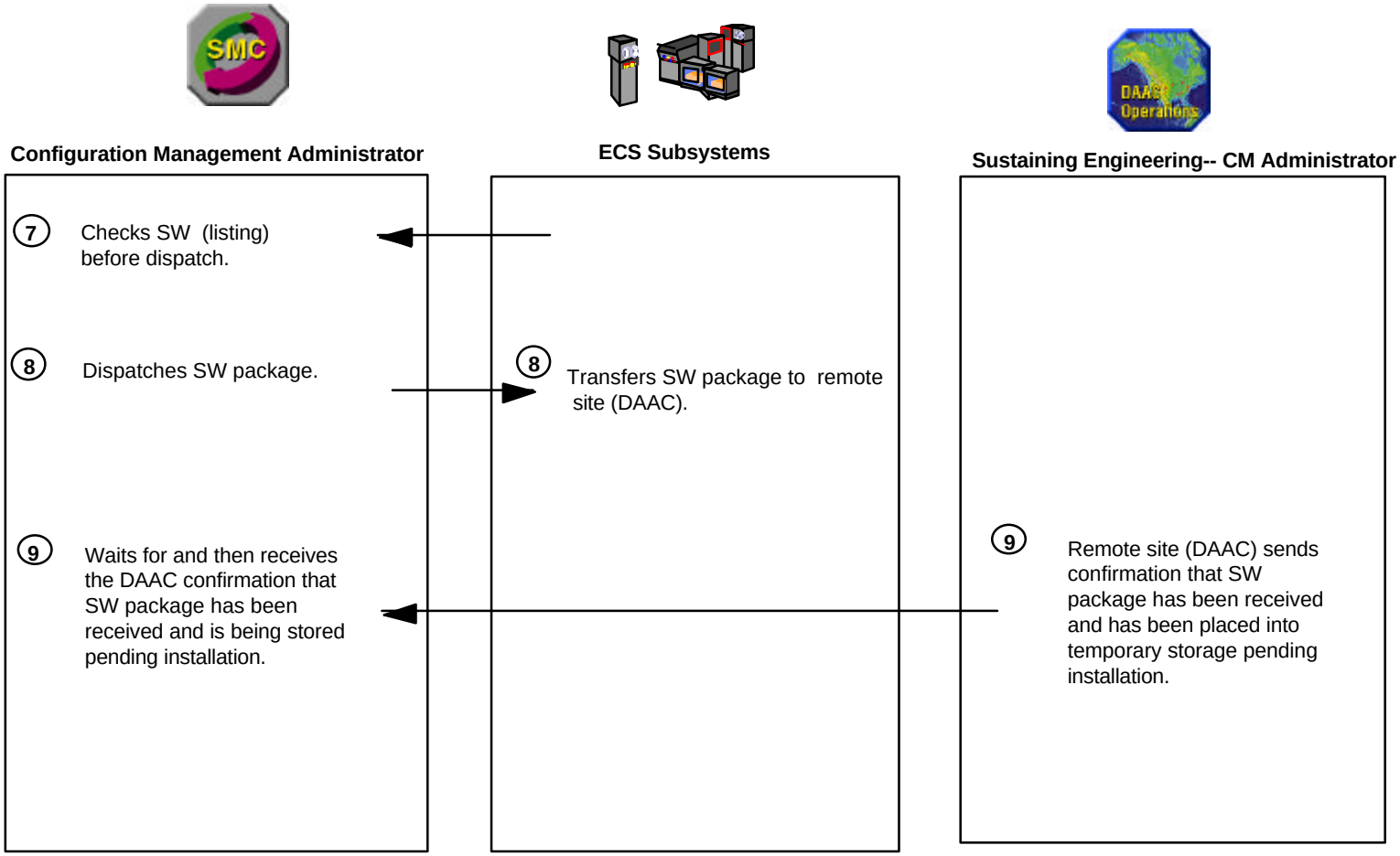


Figure 9.7.4-4. Detailed Points of View

Software Transfer & Install
Points of View III (Install)

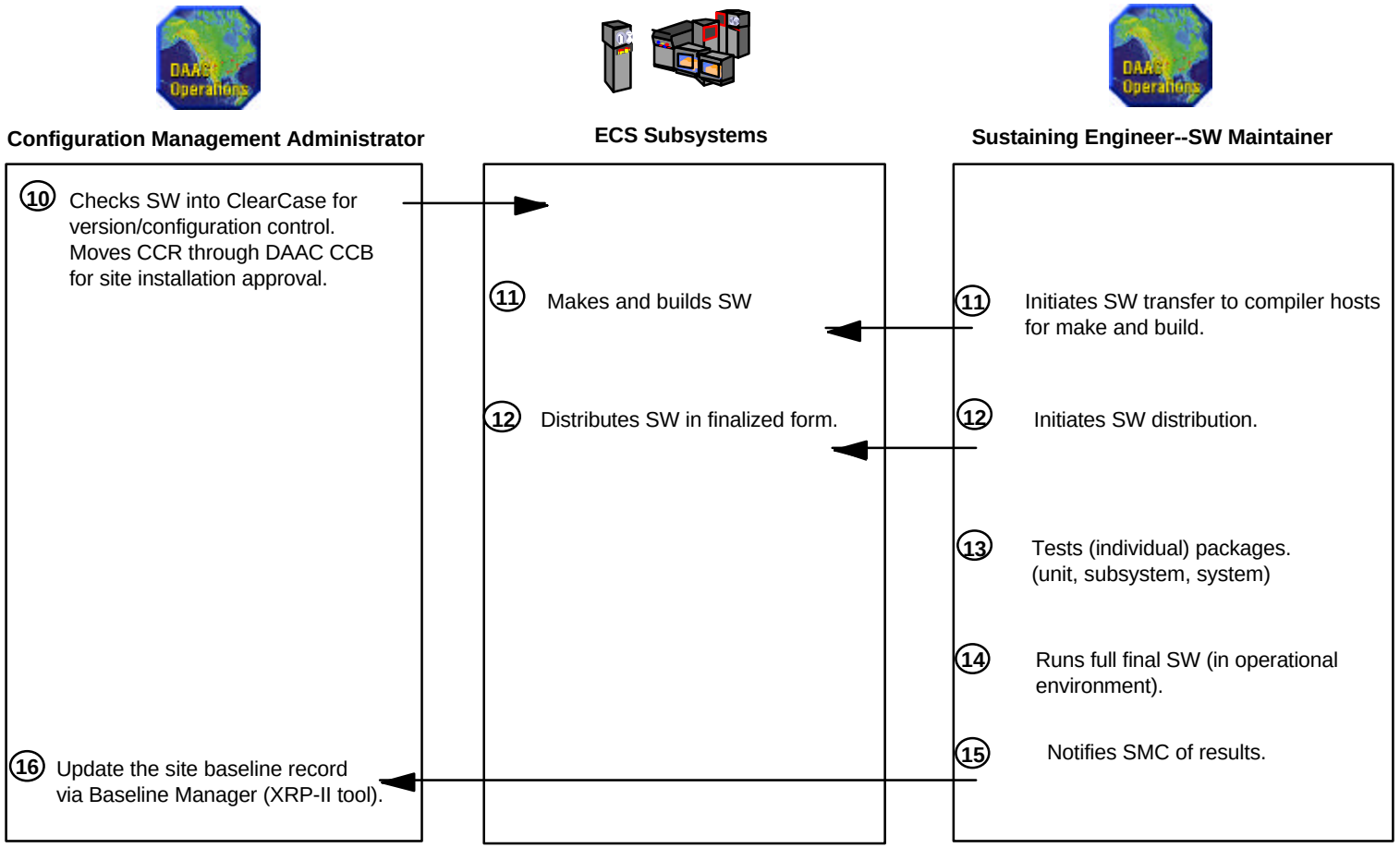


Figure 9.7.4-5. Detailed Points of View

9.7.4.4 Data Activity

The following four tables, 9.7.4-1 through 9.7.4-4, describe data activities associated with the SW transfer and installation workflows of Figures 9.7.4-1 and 9.7.4-2A for SMC Configuration Management Administrator's data maintenance activities and 9.7.4 B&C for site-level (DAAC) configuration management data maintenance by the SEO Maintence Engineer and CM Administrator.

Table 9.7.4-1. Data Activity for Workflow at the SMC

SMC Configuration Management Administrator Role	Data Element	Operator Interactions (Edit, Input, Display)
Distribution Manager (SDM) and use the tar file procedures or FTP (Release A) or Tivoli (Release B upgrade) - for bundling and transferring package parts.		
1. Invoke Software	Package ID	Input/Edit
	Package Name	Input/Edit
	SW Upgrade Name	Input/Edit
	Version	Edit
	Description	Edit
	File Structure	Edit
	Type	Input/Edit
2. Select remote site address (DAAC).	Destination	Input/Edit
3. Check, dispatch S/W package.	Destination	Edit

Table 9.7.4-2A. Data Activity for Workflow at the DAAC

DAAC CM Administrator	Data Element (Object Attribute)	Operator Interactions (Edit, Input, Display)
1. Receives message of SW ready for site installation	E-Mail (send/receive)	Display
2. Processes CCR for DAAC Installation of Software Upgrade using developer's install script stored in ClearCase.	DDTS: DAAC CCR # SW Package ID Package Name SW Upgrade Name Version Description File Structure Type Installation Schedule	Input/Edit

Table 9.7.4-2B. Data Activity for Workflow at the DAAC

DAAC Sustaining Engineer SW Maintainer	Data Element (Object Attribute)	Operator Interactions (Edit, Input, Display)
3. Installs SW Upgrade using the developer's installation script stored in ClearCase	Package ID Package Name SW Upgrade Name Version Description File Structure Type	Input/Edit
4. Verifies that all of the paths and directory structures have been created and are correct.	ClearCase: Description File Structure Type	Input/Edit
5. Runs all diagnostic tests to verify that the new upgrade is operating as expected.	ClearCase: Description File Structure Type	Input/Edit
6. Informs the Resource Manager that the upgrade is completed.	E-Mail (send/receive)	Input/Edit

Table 9.7.4-2C. Data Activity for Workflow at the DAAC

DAAC CM Administrator	Data Element (Object Attribute)	Operator Interactions (Edit, Input, Display)
7. Update the Baseline Record	**XRP-II:** **DAAC CCR #** **SW Package ID** **Package Name** **SW Upgrade Name** **Version** **File Structure** **Type** **Installation Date**	**Input/Edit**

9.8 Change Request Manager

The commercial off-the-shelf (COTS) product, Distributed Defect Tracking System (DDTS), serves as the Change Request Manager (CRM). DDTS provides the functionality necessary to compose, submit, report, and track status of changes proposed for ECS resources. It provides the M&O staff at the sites and the SMC the capability to register Configuration Change Requests (CCRs). DDTS prompts for relevant information, assigns an identifier, and mails notification of the newly submitted requests to pre-designated personnel. As the CCRs advance through approval and implementation processes, DDTS maintains status, disposition, resolution, and closure information as entered by the M&O staff. It sends notification to pre-designated personnel when the status of the CCR record changes and makes data available for viewing by authorized staff members.

The Activity Checklist table that follows provides an overview of Change Request Manager capabilities. Although Column one (**Order**) shows the order in which tasks might be accomplished, please note that they are independent of each other and can be performed in any order, as necessary. Column two (**Role**) lists the site/organization Configuration Management Administrator (CMA) responsible for performing the task. Column three (**Task**) provides a brief explanation of the task. Column four (**Section)** provides the Procedure (P) section number or Instruction (I) section number where details for performing the task can be found.

Change Request Manager - Activity List

Order	Role	Task	When and Why to Use	Section
1	CMA	View CCR	Operator uses this function whenever he/she wants to quickly view the contents of CCRs in the Index.	(P) 9.8.3
2	CMA	Submit CCR	Operator uses this function whenever there is a new CCR to be entered into the DDTS database.	(P) 9.8.4
3	CMA	Change Status of CCR	Operator uses this function whenever the activities of a particular state have been completed and its time to move to the next state.	(P) 9.8.5
4	CMA	Modify CCR	Operator uses this function to change previously entered data and/or to enter data into fields previously left blank.	(P) 9.8.6
5	CMA	Print CCR	Operator uses this function to obtain a hard or soft copy of a CCR or all of the CCRs in the CCR index.	(P) 9.8.7
6	CMA	Generate Reports	Preformatted reports will be generated for each CCB.	(I) 9.8.9

NOTE: All changes made to the CCR record are monitored by the system and logged in the History enclosure. To view this log, click on the History icon on the DDTS main screen (PureDDTS).

9.8.1 The Configuration Change Request (CCR)

The CCR form has been developed as a medium for processing CCRs throughout the ECS Maintenance and Operations environment for changes processed by the ESDIS CCB and its ECS site-level chartered CCBs at the SMC, EOC, and DAACs (GSFC, LaRC, ASF, EDC, JPL, NSIDC, and ORNL). The information included on the CCR is described below. Copies of the CCR, CCR Impact Analysis Form, and CCR Impact Summary form are provided in Section 9.2. Each CCB will have unique CCR identification sequence numbers. Each CCB can forward CCRs and reports from the Change Request Manager to SMC, where SEO processes system-level CCRs for ESDIS CCB. The ESDIS CM Plan will determine the charter of the respective CCBs and thus the scope of CCR issues to be addressed by the site CCBs.

Section 9.8.4 defines the procedures to enter data from the hardcopy CCR into the Change Request Manager.

Many of the numbered items on the form correspond to the data entry required for CCRs maintained in the Change Request Manager. [Where the hardcopy CCR information is entered in the Change Request Manager tool is defined by referencing appropriate tables found in the subsections that follow.] The Configuration Management Administrator oversees maintenance of the CCR records in the Change Request Manager for his or her respective CCB.

1. **Configuration Control Board (CCB) —** The designated CCB is checked-off for changes processed by the ESDIS CCB and its ECS site-level chartered CCBs at the SMC, DAACs (GSFC, LaRC, ASF, EDC, JPL, NSIDC, and ORNL), and EOC. [This information is not entered into the Change Request Manager.]

2. **CCR Number —** The unique serialized CCR number is applied at each site. This number is system-generated. [Submit record field; see Table 9.8.4-1.]

3. **Submitted Date —** The date that the CCR was prepared is documented. [Submit record field; see Table 9.8.4-1.]

4. **Revision —** The current revision is designated for tracking changed versions of the original CCR. The Revision number is assigned by the Configuration Management Administrator or by the originator of the CCR with approval of the Configuration Management Administrator. [Submit record field; see Table 9.8.4-1.]

5. **Priority —** The priority level of the CCR is assigned by the CCB. Emergency CCRs may have already been implemented on a temporary basis by the Trouble Ticket Review Board (TTRB) with concurrence from the CCB Chair who later receives the CCR to document/implement the permanent change. Urgent items will be reviewed by the next CCB meeting. Routine items will be reviewed as soon as the schedule permits. [Submit record field; see Table 9.8.4-1.]

6. **Change Class —** Change Classes are either I or II. Class I will be handled by ESDIS-only because of cost, schedule, and/or mission impacts that may require requirements changes. Class II items do not affect mission requirements but may have cost and/or schedule implications which affect maintenance, operations, procedures, documentation, site-tailored items, COTS implementation, site installations of core system changes, science SW changes, etc. [Submit record field; see Table 9.8.4-1.]

7. **Status —** Status of the CCR is updated in the Change Request Manager until closed by the CCB. Note that the hard copy form will not be updated but will be kept in the master suspense file of the CM Administrator until closed-out with a stamp (Item 15, below) and appropriate signatures (see Items 16 and 17, below). [Submit record field; see Table 9.8.4-1.]

   Eleven valid status indicators (states) are listed below. The corresponding Change Request Manager State Code (upper-case single character) is provided in parentheses after the status descriptive name. This code is stored in the change request record. The Change Request Manager uses this value to search and extract the descriptive name to display in reports. The descriptive names, for example, Assign-Eval, are as they appear in the Change Request Manager for selection during input. Some query and report codes use the descriptive name rather than the single letter code to facilitate querying. Following

the definition is the status as it appears on the CRR. These status indicators appear in the Change_State Menu, described in Section 9.8.5, below.

Submitted (S) — not used on CCR hardcopy but is system-generated when CCR is input to the Change Request Manager prior to a CCB decision. (Submitted)

New (N) — the initial state for all newly entered change requests. (New)

Assign-Eval (A) — state entered when the change request is being assigned to an engineer for evaluation/analysis. (Assigned-Eval)

Assign-Implement (O) — state entered when the change request is being assigned to an engineer for development. (Assigned-Implement)

Implement (R) — state entered when the proposed change has been developed. (Implemented)

Assign-Verify (T) — state entered when the developed change is being assigned to an engineer for verification testing. (Assigned-Verify)

Verify (V) — state entered when a developed change has been tested and verified that it functions properly. (Verified)

Close (C) — state entered when all activity specified in the change request has been completed or that the approval authority has decided to close it prior to completion of all activity. Referred to as Close-out stamp. (Closed)

Duplicate (D) — state entered when a change request is determined to be a duplicate of an existing change request. Duplicate change request identifies change request being duplicated. (Duplicate)

Defer (P) — state entered when activity on a change proposal has to be postponed. (Deferred)

Forward (F) — state entered when a change request needs to be forwarded to another DDTS-defined project. In DDTS terminology, a project is a grouping of change requests. For example, a change request from a site project can be forwarded to an ECS project. (Forwarded)

8. **CCR Title —** The CCR title is supplied by the originator. [Submit record field; see Table 9.8.4-1.]

9. **Originator —** The originator name, organization, e-mail address, and phone number is given. [Submit record fields; e-mail address not included; see Table 9.8.4-1.]

10. **Approval —** The CCR is approved by the designated management authority which is assigned by the CCB. This sponsorship requirement acts as a primary filter to eliminate from consideration those CCRs that cannot be implemented or which have no ECS site management support. [Assign-Implement field; see Table 9.8.5-2.]

11. **Reason for Change —** The reason for the change is narrated on the form and/or the designated attachment. [This information may be included in the Proposed Change Enclosure; see Section 9.8.4-1, Step 2.]

12. **Description of Change —** The proposed implementation of the change is narrated along with any known impacts, resources, and expenses to be incurred. [This information may be included in the Impact Summary Enclosure; see Section 9.8.5.1, Step 2.]

13. **Impact Analysis —** Impact analysis is documented in the CCR Impact Analysis form. The impact analysis is collected by the CCB Chair appointed Evaluation Engineer in coordination with the CM Administrator who maintains the CM records and assembles the review package for the CCB. The Evaluation Engineer documents the list of Impact Evaluators and derives and/ or verifies cost, technical, and schedule impact of the proposed change based on all inputs received. The results of the coordinated CCR Impact Analysis inputs are presented in the CCR Impact Summary form as part of the CCR review package. [This information may be included in the Impact Summary Enclosure; see Section 9.8.5.1, Step 2.]

14. **Comments —** Comments are added to the CCR to summarize sites and/or organizations affected by the CCR. Additional comments may address proposed CCB dispositions and recommendations to be indicated by resolutions in Item 15, below. [This information may be included in the Resolution Enclosure; see Section 9.8.5.2, Step 2.]

15. **Board Action —** CCB actions and follow-up actions that will be facilitated and tracked by the CM Administrator are indicated. [Assign-Implement field; see Table 9.8.5-2. Also may be applicable to Resolution Enclosure; see Section 9.8.5.2, Step 2.] Possible CCB dispositions are given as approved, withdrawn, disapproved, and deferred (pending follow-up activities by the indicated schedule date). Further actions are indicated as:

    Engineering Change Proposal (ECP) — changed scope of contract requirements.

    Waiver — declaration that certain contract requirements no longer apply.

    Deviation — change of contract terms or substitution of terms or deliverable requirements.

    Technical Direction — order by Contracting Officer's Technical Representative (COTR) to perform certain tasks within the scope of the contract.

    Contract Modification — changes to the terms of a contract.

    Document Change Notice (DCN) — notification of changes to published documents.

    Others — Engineering Change Notice, Change Order, Escalation to higher CCB authority, etc.

16. **CCB Approval —** CCB approval signature authority by CCB Chair or designate. [Assign-Implement field; see Table 9.8.5-2.]

17. **CCR Implemented —** This signature and close-out stamp (Item 7, above) are executed by the CM Administrator witnessing the completion of the CCR implementation process, which is tracked in the Change Request Manager automated tool and updated in Baseline Manager (XRP-II) for affected version control status changes. [Assign-Implement field; see Table 9.8.5-2.]

Sections 9.8.3 through 9.8.7 define procedures to process a CCR using the Distributed Defect Tracking System (DDTS) application software database tool that implements the Change Request Manager. The procedures, though step-by-step, are not detailed for the novice user. Please refer to the PureDDTS User's Manual whenever further explanation may be required. Relevant sections of the Manual are identified where applicable.

9.8.2 Accessing Change Request Manager

Depending on your site configuration, access to the Change Request Manager, DDTS, will be by clicking an icon from your desktop, or by typing the following at the command line prompt:

- **xddts**

The PureDDTS screen is the main screen. It consists of three major areas:

- the CCR Index Display which shows a listing of CCRs;
- the CCR Record page, which displays some of the content of the highlighted CCR in the Index; and
- the Enclosure Display, which shows the initial set of enclosure icons available for CCR update.

From this screen, you initiate all DDTS functions: View CCR, Submit CCR, Change state of CCR, Modify CCR, Print CCR. Reference Chapter 3 of the PureDDTS User's Manual for information concerning the menus and buttons on the DDTS Main Screen.

9.8.3 View a CCR

Entering DDTS brings you to the main screen (PureDDTS). To view any CCR listed in the CCR Index, simply highlight the desired CCR. The CCR is accessed.

9.8.4 Submit a CCR

Clicking the Submit button on the main screen (PureDDTS) will bring up the "Submit A New Change Request" screen. This screen enables the operator to select a class of projects (the Change Request Class is the default class) and a specific project (group of CCRs within the selected class) to which he/she wants to add a CCR. Reference Chapter 2 of the PureDDTS User's Manual for a detailed explanation of the terms, class and project.

As stated above, the selection for class of projects is defaulted for CCR processing, so you won't need to change it:

Submit to which class of projects: Change_Request

To select Project name, either type in your selection or type a question mark as shown:

Project name: ?

A drop-down menu will appear from which to make your selection. (The Configuration Management Administrator can add a project to the list. See the PureDDTS Administrator Manual.)

Click on **Help** to get an explanation for each of the fields shown, how to move within a screen, and how to terminate the submit process.

Once the Configuration Management Administrator enters the desired class of projects and project name, the CCR page displays the CCR record form. This form enables the operator to enter detailed information concerning the proposed change request. Descriptions of the Submit Record fields are listed in Table 9.8.4-1. Table 9.8.4-2 presents the steps performed using DDTS to submit CCRs. It summarizes the procedures as a quick reference. If you are already familiar with the procedures, you may refer to this table. If you are new to the system or have not performed this task recently, please refer to the more detailed steps provided in this section.

Table 9.8.4-1. Submit Record Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
CCR Number	character	10	System generated	a unique identifier for this resource change request
Submitted	date	6	System generated	the date this proposed change was first registered
Revision	character	2	Optional	the current revision/amendment to the proposed change
Priority	character	9	Required	the urgency with which a proposed change is needed. Answer must be one of the following: routine, urgent, emergency. The default is routine
Change Class	character	2	Required	the classification that distinguishes change requests according to management level needed for approval. Answer must be I or II. The default is II.
Status	character	17	System generated	the stage this proposed change has reached in its life cycle
Title	character	72	Required	the nomenclature used to identify the proposed change

Table 9.8.4-1. Submit Record Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
Originator Name	character	25	Required	name of the person who is the author of the proposed change
Organization	character	30	Required	name of the originator's organization
Phone Number	character	13	Required	phone number where originator can be reached
Organization Evaluation Engineer	character	25	Required	name of the person who initially determines whether or not the proposal has merit and should be entered into the DDTS database
CM Admin. Name	character	8	System generated	name of the individual who registered this proposed change/enters the proposed change into the DDTS database. Note, DDTS uses User's Login ID
Organization	character	5	Required	name of the CM administrator's organization. Answer must be one of the following: ASF, EDC, EOC, GSFC, JPL, LaRC, NSIDC, ORNL, SMC
Phone Number	character	13	Optional	phone number of the CM Administrator

1. Access DDTS by clicking on the DDTS icon from your desktop, or by typing the following command on the command line: **xddts**
2. Enter data in the Submit Record fields.
3. Display the Proposed Change Enclosure Screen by traversing all of the CCR record fields or by clicking on the Proposed Change icon. This enclosure is used to hold additional information about a proposed change. It enables the operator to enter a free text description of the perceived need or problem and a proposed solution. For more information on the enclosure screen see Chapter 3 (Enclosures Section) of the PureDDTS User's Manual.
4. Click the File menu on the enclosure screen and select its "save as" option to save the contents of the enclosure. You will be brought back to the main screen (PureDDTS).
5. When the main screen display reappears, click the "Commit" button to store the CCR record into the DDTS database.

Table 9.8.4-2. Submit a CCR - Quick-Step Procedures

Step	What to Enter or Select	Action to Take
1	PureDDTS Main Screen. Click on Submit button.	Initiate the CCR record submission process.
2	Enter data in fields and Proposed Change enclosure.	Enter data in Record screen.
3	Click on Commit button.	Store record into DDTS database.

9.8.5 Change State of CCR

The first status (state) assigned to a CCR after it is committed to the DDTS database is "New." Refer to the upper left corner of the center section of screen for the current status of the CCR. When it is time to move the CCR to its next life cycle state, the Change_State Menu on the main screen is used. See Number 7, Status, in Section 9.8.1, above. Table 9.8.5 presents the steps performed using DDTS to change the state of a CCR. It summarizes the procedures as a quick reference. If you are already familiar with the procedures, you may refer to this table. If you are new to the system or have not performed this task recently, please refer to the more detailed steps provided below and to Sections 9.8.5.1 through 9.8.5.5.

1. Access DDTS by clicking on the DDTS icon from your desktop, or by typing the following command on the command line: **xddts**
2. Click on the Change_State Menu to access the available state options available for the CCR record.
3. Select the next state to be assigned. After the next state is selected, the associated data fields (if any) for this new state are accessed.
4. Enter data into the associated data fields for the state, as indicated on the screen. These vary according to state being entered. For descriptions of these states, see Sections 9.8.5.1 through 9.8.5.5: Assign-Eval, Assign-Implement, Assign-Verify, Verify, Close. For the states Duplicate, Defer, and Forward, refer to the DDTS User's Manual (also Section 9.8.1, above).

Table 9.8.5. Change State of a CCR - Quick-Step Procedures

Step	What to Enter or Select	Action to Take
1	PureDDTS Main Screen. Click on Change_State menu.	Select State.
2	Enter data in fields	Enter data in applicable record screen.
3	Click on applicable Enclosure icon.	Enter data.
4	Click on Commit button.	Store record into DDTS database.

9.8.5.1 Assign-Eval State

The Assign-Eval state indicates that the change request is being assigned to an engineer for evaluation/analysis. Table 9.8.5-1 lists the fields for which values are entered.

Table 9.8.5-1. Assign-Eval Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
Evaluation Engineer	character	8	Required	name of the responsible engineer designated to analyze the proposed system change. Use Login user name of the engineer
Organization	character	5	Required	name of the evaluation engineer's organization. Answer must be one of the following: SEO, GSFC, LaRC, ASF, EDC, JPL, NSIDC, ORNL, SMC, EOS
Eval. Engr. Email Address	character	25	Optional	electronic mail address of the evaluation engineer
Impact Evaluators (evaluators 1 -12)	character	5	Optional	collection of names of organizations designated to assess the impact of this proposed change. Answer (s) must be from the following: SEO, ESDIS, GSFC, LaRC, ASF, EDC, JPL, NSIDC, ORNL, SMC, EOC, EDF
Sites Affected (sites 1-9)	character	5	Optional	the collection of names of ECS sites affected by this proposed changes. Answer (s) must be from the following: SMC, GSFC, LaRC, ASF, EDC, JPL, NSIDC, ORNL, EOC

Table 9.8.5-1. Assign-Eval Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
Related CCR#	character	10	Optional	the number of another CCR that is related to/associated with this CCR
CI Affected	character	15	Optional	the identifier of the principal configuration item affected by this proposed system change
Docs. Affected	character	56	Optional	the documents identifiers of the system documents affected by the proposed system change
Release Affected	character	10	Optional	the ECS release in which the proposed change is targeted for implementation
Baselines Affected	character	56	Optional	the identifiers of system baselines affected by the proposed change

1. Enter data in the Assign-Eval fields.
2. Display the Impact Summary Enclosure Screen by traversing all of the Assign-Eval record fields or clicking on the Summary Enclosure icon. This enclosure is used to hold free text information concerning the impact of the proposed change based on inputs received from the evaluators.
3. Click the File menu on the enclosure screen and select its “save as” option to save the contents of the enclosure. You will be brought back to the main screen (PureDDTS).
4. When the main screen display reappears, click the “Commit” button to store the next state data into the DDTS database.
5. The selected state, “Assigned-Eval,” is now shown as the current state (Status) of the CCR record.

9.8.5.2 Assign-Implement State

The Assign-Implement state indicates when the change request is being assigned to an engineer for development. Table 9.8.5-2 lists the fields for which values are entered.

Table 9.8.5-2. Assign-Implement Field Descriptions

Field Name	Data Type	Size	Entry	Description
Disposition	character	14	Required	the final decision made by a designated approval official concerning this proposed change. Answer must be one of the following: Approved, Approved_w/cmt, Disapproved, Withdrawn, Deferred
CCB Approval Official	character	25	Required	name of the individual whose decision is reflected in the proposed change's disposition
CCB Approval Date	date	6	Required	the date the final decision was made concerning this proposed change. Required format is yymmdd
CCB Org.	character	5	Required	the name of the organization whose configuration control board have authority to approve the change request. Answer must be one of the following: ESDIS, SMC, GSFC, LaRC, ASF, EDC, JPL, NSIDC, ORNL
Implementation Organization	character	5	Required	name of the organization assigned to implement this proposed change. Answer must be one of the following: SEO, GSFC, LaRC, ASF, EDC, JPL, NSIDC, ORNL
Implement. Engineer	character	8	Required	name of the responsible engineer designated to implement the proposed system change. Use Login user name of the engineer
E-mail Address	character	20	Optional	electronic mail address of the implementing engineer
Start Date-	date	6	Required	date implementation activity is to begin. Required format is yymmdd
Estimated Time to Complete	character	20	Optional	estimated time it will take to develop and unit test proposed change in days or months
Completion-Date	date	6	Optional	the date that the proposed change was completed. Required format is yymmdd
Effective Date-	date	6	Optional	the date that the proposed change is go into operation. Required format is yymmdd

1. Enter data in the Assign-Implement fields.
2. Display the Resolution Enclosure Screen by traversing all of the Assign-Implement record fields or by clicking on the Resolution Enclosure icon. This enclosure is used to hold free text description of the solution for the proposed change request.

3. Click the File menu on the enclosure screen and select its “save as” option to save the contents of the enclosure. You will be brought back to the main screen (PureDDTS).
4. When the main screen display reappears, click the “Commit” button to store the Assign-Implement state’s data into the DDTS database.
5. The Implement state (state entered when the proposed change has been developed) is the state that follows Assign-Implement on the Change_State Menu. No data fields are associated with the Implement state. When Implement is selected, the status is simply changed to Implemented.

9.8.5.3 Assign-Verify State

The Assign-Verify state indicates that the developed change is being assigned to an engineer for verification testing. Data fields appear under the heading, “TESTING INFORMATION” on the Record screen. Table 9.8.5-3 identifies these fields.

Table 9.8.5-3. Assign-Verify Field Descriptions

Field Name	Data Type	Size	Entry	Description
Test. Engr. Name	Character	25	Required	Name of the engineer designated to test the system change
Test Org.	character	5	Required	name of the test engineer's organization. Answer must be one of the following: ASF, EDC, EOC, GSFC, JPL, LaRC, NSIDC, ORNL, SMC
Est. Testing Completion Date	date	6	Optional	the date that the tester expects to have completed his testing activity. Required format is yymmdd

1. Enter data in the Assign-Verify fields.
2. After you have completed your input, the system may automatically bring you back to the main screen (Pure DDTS) or click on **Prev**.
3. When the main screen display reappears, click the “Commit” button to store the Assign-Verify state’s data into the DDTS database.

9.8.5.4 Verify State

The Verify state indicates that a developed change has been tested and verified that it functions properly. The data fields appear under the heading, “VERIFICATION INFORMATION” on the Record screen. Table 9.8.5-4 identifies these fields.

Table 9.8.5-4. Verify State Field Descriptions

Field Name	Data Type	Size	Entry	Description
Test Status	character	1	Required	this is an indicator as to whether or not the item (s) being tested has passed the test. Answer must be Passed or Failed
Enclosure Added	character	1	Required	this is an indicator as to whether or not an enclosure has been to further describe the testing activity. Answer must be Yes or No

1. Enter data in the Verify fields.
2. After you have completed your input, the system may automatically bring you back to the main screen (Pure DDTS) or click on **Prev**.
3. When the main screen display reappears, click the "Commit" button to store the Verify state's data into the DDTS database.

9.8.5.5 Close State

The Close state indicates that all activity specified in the change request has been completed or that the approval authority has decided to close it prior to completion of all activity. Data fields appear under the heading, " CLOSING INFORMATION" on the Record screen. Table 9.8.5-5 identifies these fields.

Table 9.8.5-5. Close State Field Descriptions

Field Name	Data Type	Size	Entry	Description
Closed By	character	25	Required	name of the individual that is closing the CCR
Closing Date	date	6	Required	date that the CCR is closed. Required format is yymmdd
Closer's Organization-	character	5	Required	name of the closing official's organization. Answer must be one of the following: ASF, EDC, EOC, GSFC, JPL, LaRC, NSIDC, ORNL, SMC

1. Enter data in the Close fields.
2. After you have completed your input, the system may automatically bring you back to the main screen (Pure DDTS) or click on **Prev**.
3. When the main screen display reappears, click the "Commit" button to store the Close state's data into the DDTS database.

9.8.6 Modify CCR

There will be times when the operator needs to change the information that was entered previously into the database or to enter information into fields that were not completed initially. The Modify Menu enables modification of database data. Table 9.8.6 presents the steps performed using DDTS to modify a CCR. It summarizes the procedures as a quick reference. If you are already familiar with the procedures, you may refer to this table. If you are new to the system or have not performed this task recently, please refer to the more detailed steps provided below:

1. Access DDTS by clicking on the DDTS icon from your desktop, or by typing the following command on the command line: **xddts**
2. From the Main Menu (PureDDTS) select the CCR you want to modify.
3. Click the "Modify" menu on the main screen Record to bring up the modify options.
4. Select the "Modify Record" option to change existing information and/or to enter information into fields left blank previously.
5. The cursor appears at the first field that may be modified. The modify record mode enables the operator to go through all of the fields that are associated with the current status of the CCR and make changes where appropriate.
6. Once the changes have been made, return to the main screen (Pure DDTS) and click the Commit" button on the main screen to add the changes to the database.
7. Reference Chapter 3, "Modify Menu and the Enclosure Sections," of the PureDDTS User's Manual for additional information as necessary.

Table 9.8.6. Modify a CCR - Quick-Step Procedures

Step	What to Enter or Select	Action to Take
1	From Record screen, click on Modify menu.	Select option.
2	Enter data in fields	Modify record and/or enclosure.
3	Click on Commit button.	Store record into DDTS database.

9.8.7 Print CCR

The DDTS Print option allows the operator to display a CCR or several CCRs in the CCR index in a selected format on his or her monitor; print a CCR or several CCRs in the CCR index to a printer; or print a CCR or several CCRs in the CCR index to a designated file. Table 9.8.7 presents the steps performed using DDTS to print CCRs. It summarizes the procedures as a quick reference. If you are already familiar with the procedures, you may refer to this table. If you are new to the system or have not performed this task recently, please refer to the more detailed steps provided below:

1. Access DDTS by clicking on the DDTS icon from your desktop, or by typing the following command on the command line: **xddts**
2. From the main screen (Pure DDTS), select CCR or CCRs to be printed.
3. Click on the Options Menu then select **Print**, or click on the "Print" button, to bring up the Printing Options Screen. This screen provides the operator the capability to print a highlighted CCR or all of the CCRs in the index on the main screen in a full page, index, one-line, or three-line format.
4. Select the desired option under "Where to Print" and provide appropriate information for printer and file options. Refer to Chapter 3, "Setting PureDDTS Options," of the PureDDTS User's Manual for additional details about the Printing Options screen.

Table 9.8.7. Print a CCR - Quick-Step Procedures

Step	What to Enter or Select	Action to Take
1	PureDDTS Main Screen. Click on Print button.	Select options.
2	From Format to Print screen, click on Print button..	Store record into DDTS database.

9.8.8 Required Operating Environment

9.8.8.1 Interfaces and Data Types

The DDTS application will interface only with the ClearCase application at each of the sites. This DDTS/ClearCase interface is facilitated by a ClearCase/DDTS Integration COTS package. DDTS has no interfaces external to the ECS.

9.8.8.2 Databases

The PureDDTS database is a proprietary database that supports the SQL 89 standard. Reference Appendixes F and G of the PureDDTS Administrator's Manual for details about the PureDDTS database.

9.8.8.3 Database Schema

Reference Appendix F of the PureDDTS Administrator's Manual for a description of DDTS' database schema.

9.8.8.4 Database Parameters

Reference Appendixes F and G of the PureDDTS Administrator's Manual for DDTS' database parameters.

9.8.8.5 Command Line Interface

DDTS interfaces with ClearCase only. This interface is facilitated through a ClearCase/DDTS Integration COTS package. No custom command line interface has been developed. This interface supports a verification query by ClearCase for authorization by maintenance engineering staff to change configuration controlled files based on specific CCR authorization.

9.8.8.6 Event and Error Messages

Standard DDTS event and error messages are used. There are no messages unique to the ECS implementation. A list of the PureDDTS event and error messages is not provided in the PureDDTS User's and Administrator's Manuals. However, messages provided during execution of DDTS are self explanatory.

9.8.9 Reports

Standard DDTS reports are to be used. Reference Chapter 3 of the DDTS User's Manual (Setting PureDDTS Options) for information concerning the printing of a CCR report and a description of the available report formats.

Table 9.8.9. Reports

Report Type	Report Description	When and Why Used
Not Applicable		

9.8.9.1 Sample Reports

9.8.9.2 Sample Report (Full Page Format)

Below is a sample CCR report resulting from the use of the DDTS Printing Option (full page format).

```
                    ECS_CHNG_REQ
                                        Page 1/3
CCR Number: MSSdd00630  Submitted   : 960529   Revision:
Priority  : routine     Change Class: II
Status    : Closed      Enclosures  : 3
Title:
 Revise Data Input Screen (Example Only)

CCR ORIGINATOR INFORMATION
  Originator Name: Frank Pace
  Organization   : LaRC
  Phone Number   : (999)234-1289
  Organization Evaluation Engineer: J. Bellamy

CONFIGURATION MANAGEMENT ADMINISTRATOR
  CM Admin. Name: bfloyd
  Organization  : LaRC
  Phone Number  : (999)234-1830
                    ECS_CHNG_REQ
                                        Page 2/3
CCR Number: MSSdd00630

ANALYSIS INFORMATION
  Evaluation Engineer : bfloyd
        Organization : LaRC
        Email Address: bfloyd@larc.com

  Impact Evaluators:
        1. GSFC    2. LaRC   3. EDF    4.       5.        6.
        7.         8.        9.        10.      11.       12.

  Sites Affected:
        1. GSFC    2. LaRC    3. SMC    4.       5.      6.
        7.         8.         9.

  Related CCR# :
  CI Affected  : Planning CSCI
  Documents Affected:
  Release Affected  : Release X
  Baselines Affected:
                    ECS_CHNG_REQ
                                        Page 3/3
CCR Number: MSSdd00630

DISPOSITION: Approved               TESTING INFORMATION:
  CCB Approval Official: John Wana     Engr. Name: Joe Tester
  Date: 960607                      Organization: LaRC
  CCB Organization: ESDIS           Est. Testing Completion
```

Date: 960614

IMPLEMENTATION
Organization: SEO
Engineer: bfloyd
E-mail: efinch@eos.com
Start Date: 960610
Est. Time to Complete: 2 days
Completion Date: 960612
Effective Date: 960710

VERIFICATION INFORMATION:
Test Status (Pass/Fail): P
Enclosure Added (Y/N): N

CLOSING INFORMATION:
Closed by: Authur Closer Date: 960618 Org.: SMC

********** Proposed Change **********
Need or Problem: Describe the need or problem.

The need is -----

Proposed Solution: Describe the proposed solution.

Suggest that the following capability be changed as follows:
- capability changes

********** Impact Summary **********
Summarize the impact statements received from the organizations requested to provide impacts.

Summary of impacts received from GSFC and EDF is ---------

Resources Summarized: [description of resources]

Technical Summary:

ROM Summary (BOE, Cost & Schedule):

Recommendation: [Insert Recommendation]
********** Resolution **********
Describe how the request will be resolved/completed.

This request will be resolved as follows:
- Capability x will be modified to ----.

****

The Resolution Enclosure is the end of the full page format report.

9.8.9.3 Sample Report (Three Line Format)

Below is a sample CCR report resulting from the use of the DDTS Printing Option, Three Line Format. [Note: this document's margins forced the data to a fourth line.]

Submitted 960529, CCR# MSSdd00630, Originator Frank Pace
Title Revise Data Input Screen (Example Only)
Priority routine, Class II, CCB Org. ESDIS, Disp. Approved, Status Closed.

Submitted 960521, CCR# MSSdd00617, Originator Joseph Winkler
Title Add GUI to X11 Program (Example Only)
Priority routine, Class II, CCB Org. LaRC, Disp. Approved, Status Implemented.

9.8.9.4 Sample Report (Index Format)

Below is a sample CCR report resulting from the use of the DDTS Printing Option (Index format). Fields displayed are CCR Identifier, Title, Change Class, Priority, and Status.

MSSdd00630 Revise Data Input Screen(Example Only) II routine C
MSSdd00617 Add GUI to X11 Program (Example Only) II routine R

9.8.9.5 Sample Report (One Line Format)

Below is a sample CCR report resulting from the use of the DDTS Printing Option (One Line format). The operator selects the fields desired for the one line format. In this case, the Identifier, CCR Originator, Originator Organization, Implementing Organization, and Status fields were selected and their data values are displayed.

MSSdd00630 Frank Pace LaRC SEO C
MSSdd00617 Joseph Winkler GSFC LaRC R

9.8.9.6 Report Customization

Refer to Chapter 8 of the PureDDTS Administrator's Manual for explanations of how to customize DDTS reports. Chapter 8 explains how to customize canned reports and how to create and add new reports.

9.9 Use of the Baseline Manager

9.9.1 Overview

Baseline Manager (BM) is used to record and report the as-built operational baseline of ECS products. It contains the configuration record for each baselined product. It identifies products by CI name, description, location, model/version, and component configured articles. It provides traceability to previous configurations.

XRP-II is a commercially available manufacturing management application specially configured to serve as the ECS Baseline Manager. It helps the M&O staff at the DAACs, EOC, and SMC maintain records that describe what comprises baselined operational system configurations. These records identify baselined versions of hardware and software items as well as their assembly

structures and interdependencies. XRP-II keeps chronological histories of baseline changes and traceability of items to predecessor versions and system releases.

Baseline Manager does this primarily by maintaining a catalog of version-controlled items along with data about how they interrelate. The most significant relationship is product structure, which is a parent-component pairing of two control items. Using XRP-II's engineering change notices and effectivity data (active and inactive dates), product structure changes can be reported, checked, and approved before they go into effect, and tracked by control item as well as related Configuration Change Request and/or trouble ticket.

The Baseline Manager data schema is shown in Figure 9.9-1. This is a system-level view consistent with the records kept at the System Management Center spanning all ECS sites in one database. Control items may be mapped via development baselines as shown on the right-hand-side (RHS) of the chart known as the *CIL/CAL View* which is derived from the functional mapping of the Configuration Items List (CIL) and the Configured Articles List (CAL), respectively. Control items may also be mapped via operational baselines (ECS, $Site_i$, M&O, & Release) as shown on the left-hand-side (LHS) of the chart known as the *Logical Operations View of Baselines* which derives from the on-site implementation of ECS. Both views are traceable to the CAL which constitutes the inventory of ECS product delivered end-items. The RHS provides a hierarchical, functional trace of the CAL to configuration items, subsystems, and common items. The LHS provides logical abstractions of the operational implementation view of the CAL items. The RHS is relatively static since it derives from the ECS design while the LHS is more fluid because it is subject to change with operational modifications due to on-site implementation.

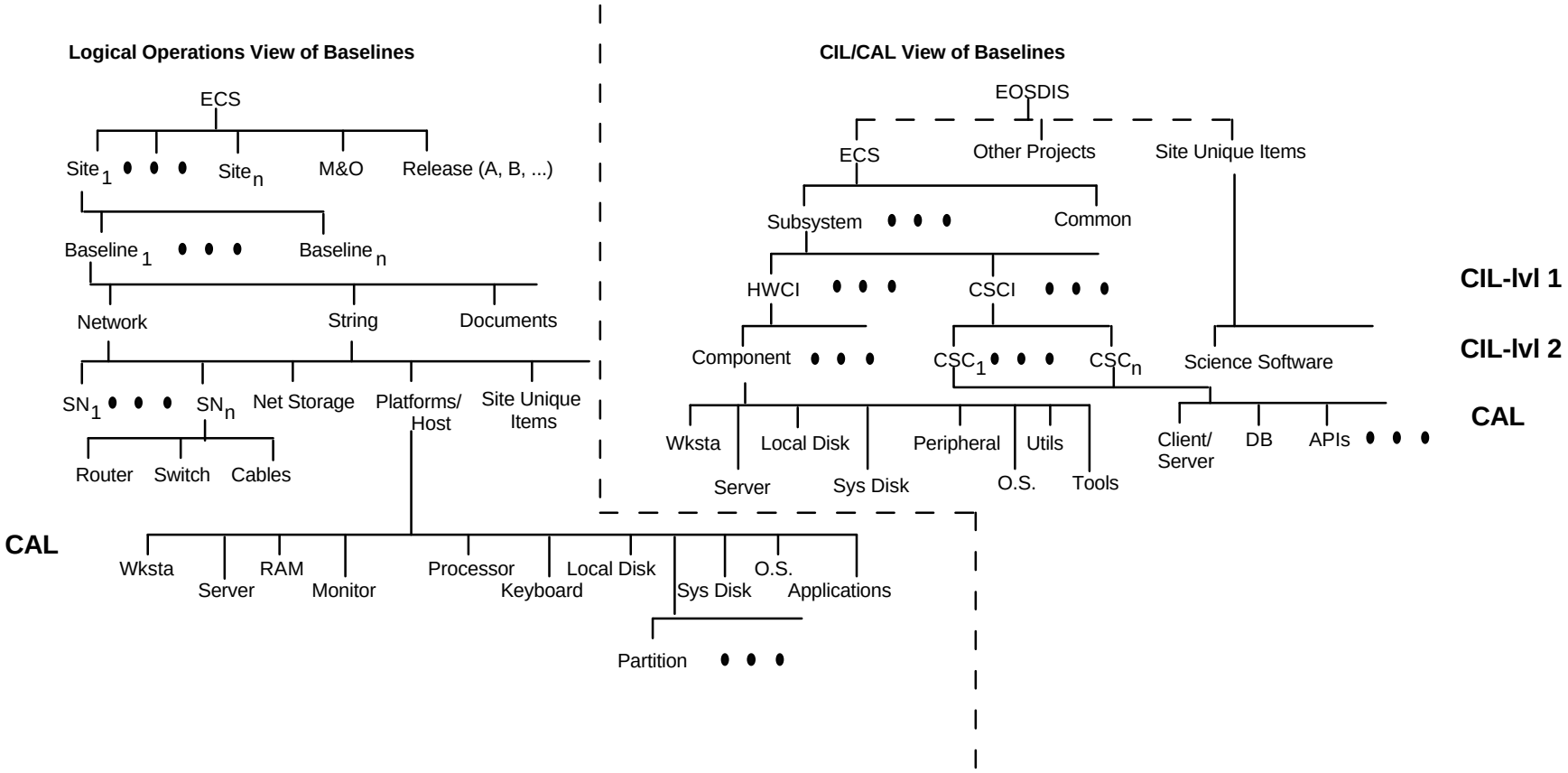
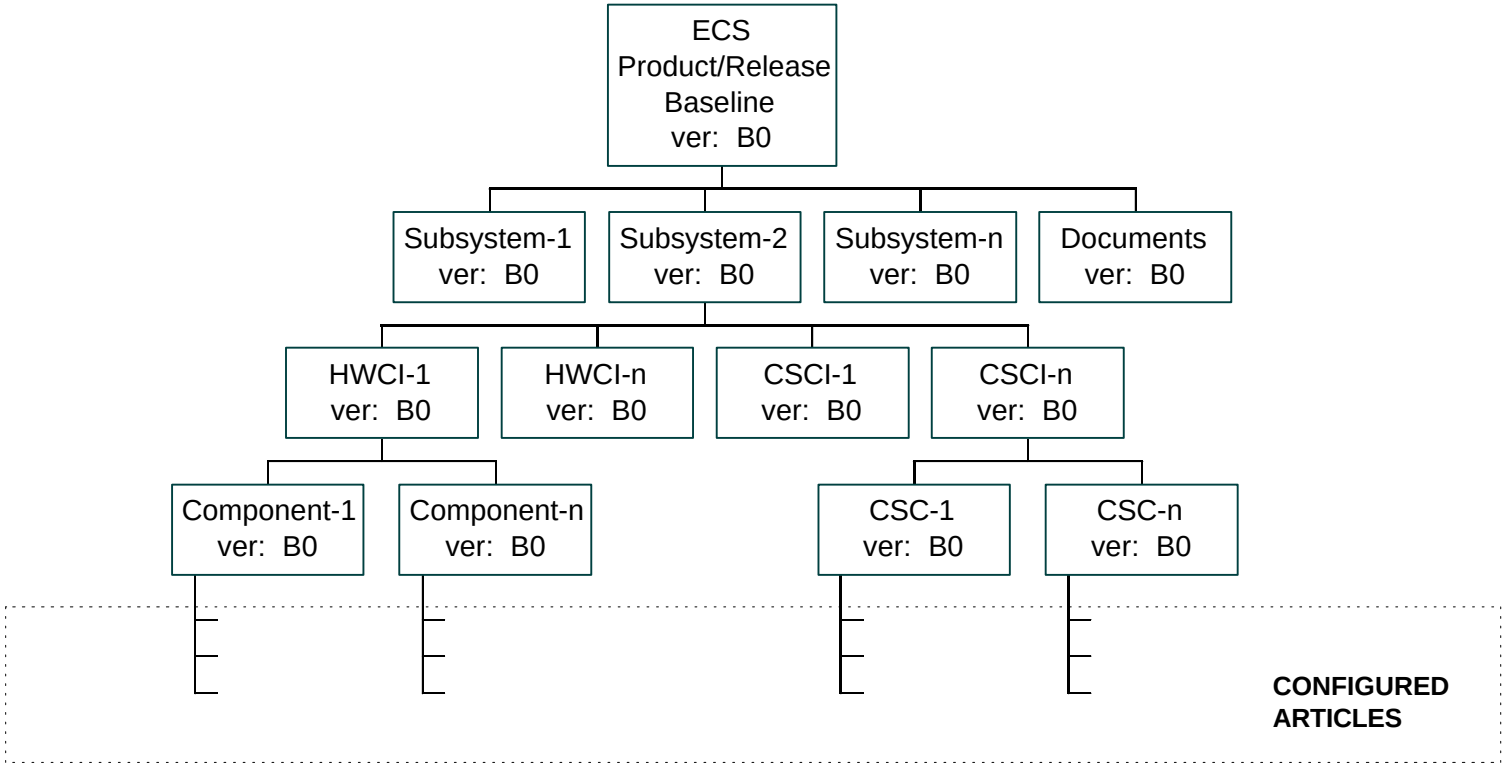


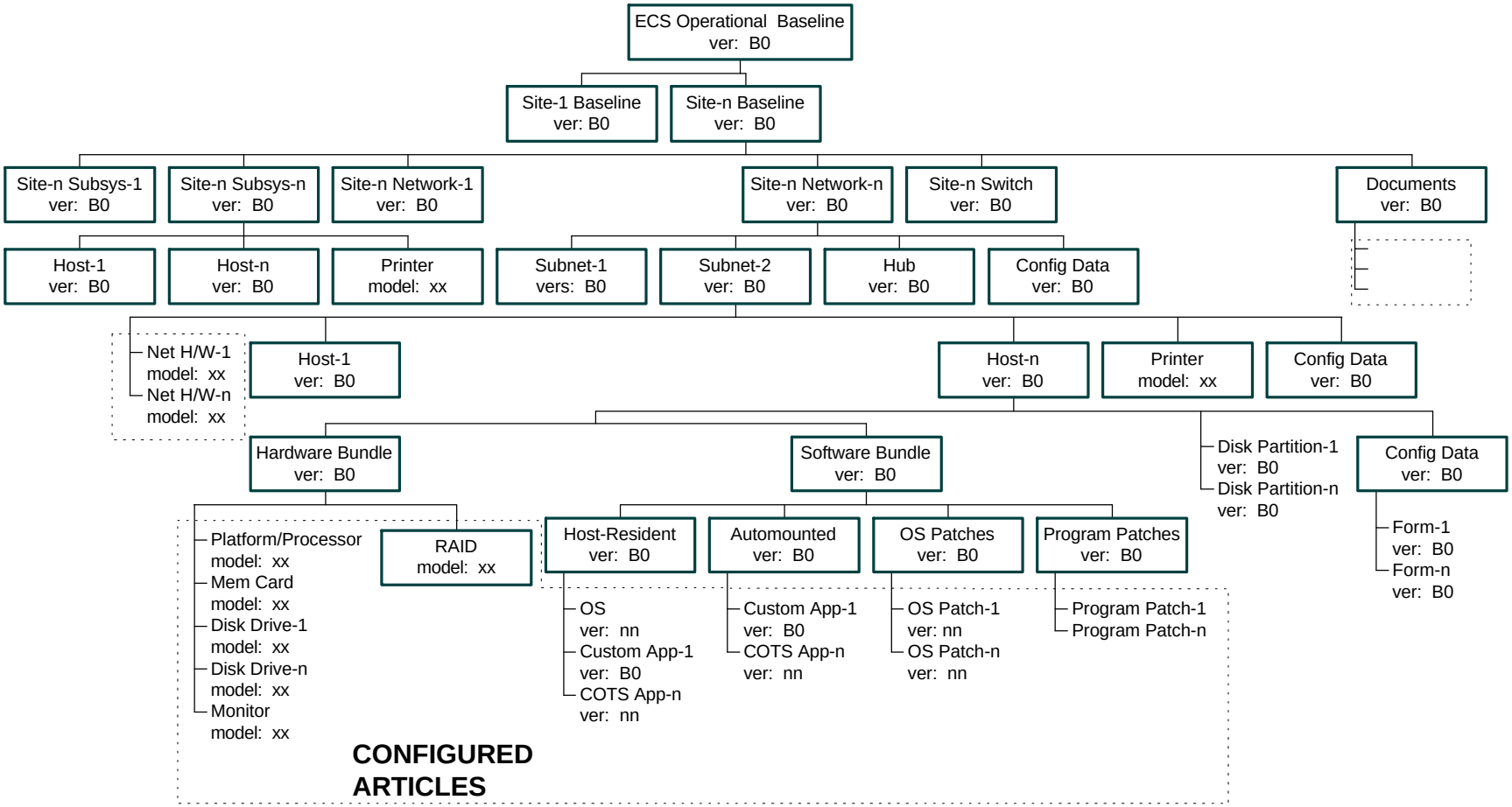
Figure 9.9-1. Hierarchy of Control Items for Baseline Management

A further detailed instantiation of the Baseline Manager (BLM) data schema is shown in figures 9.9-2 and 9.9-3 which show the Design (CIL/CAL) View and the Operational (Logical) View, respectively, for Release B0. These drawings represent the delivered EOSDIS Core System design and on-site build-out, respectively. This is a composite view of the release data delivered to each ECS site. Site-unique items, site created baselines, science software, maintenance changes, and baseline add-ons will be added to produce a site-unique BLM database.



Design (CIL/CAL) View

Figure 9.9-2. Design (CIL/ CAL) View



Operational (Logical) View

Figure 9.9-3. Operational (Logical) View

A series of Figures 9.9-4 (part 1 & 2) for the design view, Figures 9.9-5 (parts 1 thru 4) for the operational view, and Figures 9.9-6 (part 1 &2) for details of the operational view introduce the nomenclature for BLM records. This series of figures depicts the major types of records consistent with the database schema. The records are distinguished as a set of record classes with a common set of parameters for the design view and operational view. Further details elaborate necessary parameters of operational records in Figures 9.9-6. Subsection 9.9.2.2 will supply detailed procedures for the use of of BLM records, screens, and fields.

Parameter	**EOSDIS**	**ECS**	**Site Unique Items**	**Science SW Bundle**	**Common "reserved"**
Control Item ID	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)	<*site prefix*>b<*seq #*> (e.g., GSFb00000001)	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)
Name/ Doc. No. (24 chars max)	EOS Data and Info Sys	EOSDIS Core System	Site Uniques Collection	Science Software Bundle	Common Subsystem
Mnemonic	EOSDIS	ECS	n/a		Common
Description/Title	EOSDIS for AM Launch Ready Release	EOSDIS Core System for AM Launch Ready Release	Collection of Site Unique Control Items for Release B0	System view of science software used for production	Multiple subsystem-level bundle
Item Class	other	design	other	other	design
Item Subclass	program	project	uniques bundle	science bundle	subsystem
Model/ Version	(as appropriate)	B0	(as appropriate)	(as appropriate)	B0
Predecessor/ID	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)
Configured Article	N (no)	N (no)	N (no)	N (no)	N (no)
Resource Planning	N (no)	N (no)	N (no)	N (no)	N (no)
Scope	C (core)	C (core)	U (site-unique)	U (site-unique)	C (core)
Mfr/Dev	n/a	ECS	GSFC	*DAAC mnemonic*	ECS
Commodity Code	n/a	ECS	n/a	other	custom
Detail Items					
Notes **1. control item ID**	**Core**: b*xxxxxxxx* 8 char. with "b" (BLM baseline) or "i" (ILM) suffix	**Site specific**: GSFb*xxxxxxxx* 3 char. prefix for site			

Figure 9.9-4. Common Nomenclature for Baseline Manager Design View Items (1 of 2)

Parameter	Subsystem	HWCI	CSCI	HW Component	SW Component (CSC)
Control Item ID	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)
Name/ Doc. No. (24 chars max)	*subsystem name* (e.g., System Mgmt Subsystem)	*HWCI name* *(*e.g., Mgmt Hardware CI)	*CSCI name* (e.g., Management Software CI)	*hw component name* (e.g., Ent Mon Svr Comp)	*sw component name* (e.g., Mode Mgmt Service CSC)
Mnemonic	*mnemonic* (e.g., MSS)	*mnemonic* (e.g., MHCI)	*mnemonic* (e.g., MCI)	*mnemonic* (e.g., EMS)	*mnemonic* (e.g., MMS)
Description/Title	*description* (e.g., System Management Subsystem (AM-1))	*description* (e.g., Management Hardware config item (AM-1))	*description* (e.g., Management Software config item (AM-1))	*description* (e.g., Enterprise Monitoring Server hw component (AM-1))	*description* (e.g., Mode Management Service sw component (AM-1))
Item Class	design	design	design	design	design
Item Subclass	subsystem	HWCI	CSCI	component	CSC
Model/ Version	B0	B0	B0	B0	B0
Predecessor/ID	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)
Configured Article	N (no)	N (no)	N (no)	N (no)	N (no)
Planning Resource	N (no)	N (no)	N (no)	N (no)	N (no)
Scope	C (core)	C (core)	C (core)	C (core)	C (core)
Mfr/Dev	ECS	ECS	ECS	ECS	ECS
Commodity Code	custom	other	other	other	other
Detail Items					
Notes **1. control item ID**		**Core**: bxxxxxxxx 8 char. with “b” (BLM baseline) or “i” (ILM) suffix	**Site specific**: GSFbxxxxxxxx 3 char. prefix for site.		

Figure 9.9-4. Common Nomenclature for Baseline Manager Design View Items (2 of 2)

Parameter	Release	M&O	Site	Baseline	Network
Control Item ID	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)	<*site prefix*>b<*seq #*> (e.g., GSFb00000001)	<*site prefix*>b<*seq #*> (e.g., GSFb00000001)	<*site prefix*>b<*seq #*> (e.g., GSFb00000001)
Name/ Doc. No. (24 chars max)	Release <*id*> (e.g., Release B0)	Maintenance & Operations Release	*site name* GSFC DAAC	*baseline name* GDAAC Baseline	*network name* GSFC Local Area Network
Mnemonic			(e.g., GSFC, LaRC)		(e.g., GDAAC LAN)
Description/Title	*description* (e.g., EOS AM-1 Launch Ready ECS Release)	*description* (e.g., EOS AM-1 Launch Ready ECS Maint Release B0.1*)*	*description* (e.g., GDAAC site baseline)	*description* (e.g., GDAAC Site Operational Baseline for AM-1)	*description* (e.g., GDAAC Local Area Network for AM-1)
Item Class	baseline	baseline	baseline	baseline	network
Item Subclass	release	maint release	site	site	FDDI or Ethernet or user subnet or segment
Model/ Version	*release version* (e.g., B0)	*baseline version* (e.g., B0.x)	*site version* (e.g., GSFC.B0.x)	*baseline version* (e.g., GSF.B0.x.n)	*network version* *(e.g.,* GSFC.B0.x)
Predecessor/ID	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)	<*site prefix*>b<*seq #*> (e.g., GSFb00000001)	<*site prefix*>b<*seq #*> (e.g., GSFb00000001)	<*site prefix*>b<*seq #*> (e.g., GSFb00000001)
Configured Article	N (no)	N (no)	N (no)	N (no)	N (no)
Planning Resource	N (no)	N (no)	N (no)	N (no)	N (no)
Scope	C (core)	C (core) or S (site-specific)	S (site-specific)	U (site-unique)	S (site-specific)
Mfr/Dev	ECS	ECS	ECS	ECS	ECS
Commodity Code	other	other	other	other	other
Detail Items					
Notes **1. control item ID**	**Core**: bxxxxxxxx 8 char. with "b" (BLM baseline) or "i" (ILM) suffix	**Site specific**: GSFbxxxxxxxx 3 char. prefix for site,			

Figure 9.9-5. Common Nomenclature for Baseline Manager Operational View (1 of 4)

Parameter	Site Subsystem Collection	Host	Documents	Disk Partitions	Configuration Data
Control Item ID	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)
Name/ Doc. No. (24 chars max)	*collection name* (e.g., GSFC Collection of MSS Resources)	*host name* (e.g., g0mss02)	*document number* (e.g., 102-CD-002-001)	*partition name* (e.g., MSS Data)	*Form or Doc #*
Mnemonic	(e.g., GSFC MSS)				
Description/Title	(e.g., Release B0 MSS resources at GSFC)	(e.g., Release B0 MSS CM Server)	(e.g., M&O CM Plan)	*partition desc*	*document title*
Item Class	bundle	host	document	partition	document
Item Subclass	subsystem	*host subclass* (e.g., server, xterm, workstation)	*document type* (e.g., plan)	*partition type* (e.g., system, user)	*config data type* (e.g., assembly drawing)
Model/ Version	B0	B0	n/a	B0	B0
Predecessor/ID	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)
Configured Article	N (no)	Y (yes)	Y (yes)	N(o)	N (no)
Planning Resource	N (no)	Y (yes)	N (no)	Y (yes)	N (no)
Scope	S (site-specific)	S (site-specific)	C (core) or S (site-specific) or U (site-unique)	C (core) or S (site-specific) or U (site-unique)	C (core) or S (site-specific) or U (site-unique)
Mfr/Dev	ECS	ECS	ECS	ECS	ECS
Commodity Code		config	COTS or Custom	Custom	custom
Detail Items					
Notes **1. control item ID**	**Core**: bxxxxxxxx 8 char. with “b” (BLM baseline) or “i” (ILM) suffix	**Site specific**: GSFbxxxxxxxx 3 char. prefix for site,			

Figure 9.9-5. Common Nomenclature for Baseline Manager Operational View (2 of 4)

Parameter	HW Bundle	SW Bundle	Host Resident Bundle	Automount Bundle	Patch Bundle
Control Item ID	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)
Name/ Doc. No. (24 chars max)	*bundle name* (e.g., Ingest Svr swbndl)	*bundle name* (e.g., Ingest Svr hwbndl	*bundle name* (e.g., Ingest Svr resbndl)	*bundle name* (e.g., Ingest Svr autombndl)	*bundle name* (e.g., SGI ptchbndl for Indigo)
Mnemonic					
Description/Title	(e.g., Core hardware bundle for Ingest Server)	(e.g., Core software bundle for Ingest Server)	(e.g., Core host resident sw bundle for Ingest Server)	(e.g., Core automounted sw bundle for Ingest Server)	(e.g., OS patch bundle for SGI Indigos)
Item Class	hardware	software	software	software	software
Item Subclass	bundle	bundle	resident bundle	automount bundle	OS patch bundle
Model/ Version	B0	B0	B0	B0	B0
Predecessor/ID	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)
Configured Article	N (no)	N (no)	N (no)	N (no)	N (no)
Planning Resource	N (no)	N (no)	N (no)	N (no)	N (no)
Scope	C (core) or S (site-specific) or U (site-unique)	C (core) or S (site-specific) or U (site-unique)	C (core) or S (site-specific) or U (site-unique)	C (core) or S (site-specific) or U (site-unique)	C (core) or S (site-specific) or U (site-unique)
Mfr/Dev	ECS	ECS	ECS	ECS	ECS
Commodity Code					
Detail Items					
Notes **1. control item ID**	**Core**: bxxxxxxxx 8 char. with "b" (BLM baseline) or "i" (ILM) suffix	**Site specific**: GSFbxxxxxxxx 3 char. prefix for site			

Figure 9.9-5. Common Nomenclature for Baseline Manager Operational View (3 of 4)

Parameter	Hardware	Software	Patches		
Control Item ID	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)		
Name/ Doc. No. (24 chars max)	*Vendor Product Name* (e.g., SPARCstorage Array)	*Vendor Product Name* (e.g., Clearcase)	*Vendor Patch ID* (e.g., PHSS_9824)		
Mnemonic		CC			
Description/Title	*Vendor Prod Desc* (e.g., 6.3 GB SPARCstorage Array	*Vendor Prod Desc* (e.g., SW Library, CM Tool)	*Vendor description of Patch*		
Item Class	hardware	software	software		
Item Subclass	*device type* (e.g., ext. hard disk)	*software type* (e.g., application)	*patch type* (e.g., OS patch)		
Model/ Version	*Mfr. Model No.* 101	*product version* (e.g., 2.1 or B0)	*product version* (e.g., 10.01)		
Predecessor/ID	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)	b<*seq #*> (e.g., b00000001)		
Configured Article	Y (yes)	Y (yes)	Y (yes)		
Planning Resource	Y (yes)	Y (yes) (OS only)	N (no)		
Scope	C(ore) or S (site-specific) or U (site-unique)	C(ore) or S (site-specific) or U (site-unique)	C(ore) or S (site-specific) or U (site-unique)		
Mfr/Dev	*Mfr Code* (e.g., SUN)	*Developer Code* (e.g., ATR)	*vendor code* or ECS		
Commodity Code	COTS	COTS	COTS or Custom		
Notes **1. control item ID**	**Core**: bxxxxxxxx 8 char. with "b" (BLM baseline) or "i" (ILM) suffix	**Site specific**: GSFbxxxxxxxx 3 char. prefix for site,			

Figure 9.9-5. Common Nomenclature for Baseline Manager Operational View (4 of 4)

Parameter	Hardware	Software	Host	Document	Disk Partitions
Capacity/Size	*Cap/Size Description*				
Format	*Format Classification*				
Mx Exp Slots	*Total Expansion Slots*				
Total Ports	*Number of serial ports or network connections*				
IO Protocols	*List of Protocols*				
Variant		*Platform Type* (e.g., Sun, HP, SGI, etc.)			
TCP/UDP Port		*Port ID* (e.g., 1744)			
Principal Dir		*Directory Path* (e.g., /usr/ecs/OPS/COTS/atria)			
License Type		(e.g., floating, nodelocked, etc.)			
Total Licenses		*License Qty* (e.g., 150)			
# CPUs			*Total CPUs* *<nnn>*		
Processor ID			*Mfr's Processor ID* (e.g., SuperSPARC+)		
Total RAM			*Total RAM (MB)* *<nnn>*		
# Logical Disks			*# of Logical Partitions* *<nnn>*		
Swap Cache			*Cache Size (in blocks)* *<nnn>*		
Disk Cache			*Cache Size (in blocks)* *<nnn>*		
MAC Address			*<address string>*		
IP Address			*<address string>*		
IO Ports			*Desc or List of IO Port*		

Figure 9.9-6. Common Nomenclature for Baseline Manager Operational View - DETAILS (1 of 2)

Parameter	Hardware	Software	Host	Document	Disk Partitions
Publisher				*Publisher's Code* (e.g., SUN)	
Publ Date				*mm/dd/yy*	
Latest Chg Notice				*Change Notice ID*	
Issue				*Document Edition* (e.g., draft, final, etc.)	
Directory Name					*Logical Name for Device* (e.g., /dev/dsk1/…)
Device Name					*Phys. Name for Device* (e.g., /)
Logical Allocation					(e.g., system, user, etc.)
Partition Size					*Partition Size (in blocks)*
Block Size					*Block Size (in bytes)*

Figure 9.9-6. Common Nomenclature for Baseline Manager Operational View - DETAILS (2 of 2)

At each site, XRP-II manages data about baselined resources deployed to and established at that site. At the SMC, it also offers a consolidated view of control item baseline data system-wide. A variety of reports can be viewed, printed, or saved in a file for posting to an ECS bulletin board for global viewing, and the DAACs, EOC, and SMC can exchange baseline records and reports electronically via formatted files. Additionally, a special file identifying the resources of an operational, production baseline can be produced for the Planning Subsystem and its operators doing resource planning.

Table 9.9-1 summarizes the operator functions that XRP-II supports.

Table 9.9-1. Common ECS Operator Functions Performed with XRP-II (1 of 2)

Operating Function	CHUI	Description	When and Why to Use
Catalog control items (Section 9.9.2.2)	Control Item Master menu; Deployment Maintenance screen	Operators select and use a data entry screen to update records identifying individual control items and to identify the sites at which each is (to be) deployed	Used whenever a new control item is to be added or deleted, or when the characterization of an existing one needs changing
Define/Update what comprises baselines and other control item assemblies (Section 9.9.2.3)	Bill Of Material menu	Operators select and use data entry screens to record engineering change notices and maintain product structure records for control.	Used whenever the component structure of a control item has to be defined or changed
Distribute baseline change records for a release (Section 9.9.2.4)	Export Release Records screen	Operators select one or more control items and initiate creation of formatted files which they can ftp to one or more sites. The files contain all appropriate, related records.	Used whenever a baseline change is to be released from one site for distribution to others.
Incorporate release records at a site (Section 9.9.2.5)	Import Data screen	Operators at the sites import data from tar files ftp'ed from the SMC (or other site)	Used any time an XRP-II formatted file containing database updates is available at a site
Provide site baseline change records to the SMC (Section 9.9.2.6)	Export Site-Unique Changes screen	Operators at the sites create files containing site-unique records changed since the last data export, and can ftp the files to the SMC (and other sites if desired.)	Used as required so the SMC can maintain a current, consolidated database of what comprises operational site baselines system-wide.
Incorporate site baseline change records at the SMC (Section 9.9.2.5)	Import Data screen	Operators at the sites import data from tar files ftp'ed from a site	Used any time an XRP-II formatted file containing database updates is available at the SMC

Table 9.9-1. Common ECS Operator Functions Performed with XRP-II (2 of 2)

Operating Function	CHUI	Description	When and Why to Use
Maintain control item deployment data (Section 9.9.2.7)	Deployment Maintenance screen	Operators maintain records describing the implementation status and installation dates of control items at a site	Used whenever the installation date or implementation status of a control item is established or changed. (Note: Records in the bill of materials for site "production" baselines are used by Resource Planning to maintain its resource inventory.)
Update dependencies among control items (Section 9.9.2.8)	Control Item Interdependenc y Maint screen	Operators maintain records that define operator-specifiable relationships between any two control items	Used primarily to identify resources that are version-dependent and to correlate documents with the resources they describe
Query Control Item Records (Section 9.9.2.9)	Query menu	Provides access to data retrieval screens	Used to view information about control items, product structures, and change histories, primarily by operators not authorized to change it
Generate Pre-defined Reports (Section 9.9.2.10)	Report menu	Provides access to a variety of pre-defined reports that can be generated according to operator-specified record selection criteria	Used whenever a hard or soft copy of a report is desired
Perform baseline management master files maintenance (Section 9.9.2.11)	Utilities menu	Provides access to a variety of screens for accomplishing tasks that sustain local baseline management operations	Used whenever changes are needed to reference files for baseline management and to force recalculation of certain underlying codes and dates.
Perform XRP-II master files maintenance (Section 9.9.2.12)	System Utilities menu	Provides access to a variety of screens for accomplishing tasks that sustain XRP-II operations system-wide	Used whenever changes are needed to the system's tunable parameters and reference files used throughout the XRP-II system.

The spreadsheet in Table 9.9-2 shows the myriad uses of Baseline Manager by a broad spectrum of ECS Operations personnel. The number sequences in the table have a connotation of access to a defined sequence of BM screens provided via the XRP-II application program.

Table 9.9-2. Screen Allocations to Tasks Groups (1 of 9)

Table 9.9-2: Screen Allocations (2)

Tasks Groups	Tasks	Main	Baseline Management	1. Control Item Master	Data Screens	2. Bill of Material	Data Screens
					1.1 All Control Items		2.1 Engineering Change Entry
					1.2 Hardware Items Only		2.2 Engineering Change Approval
	N.B.				1.3 Software Items Only		2.3 Product Structure Maint
	1. Access to the XRP-II screens is controlled via Groups as indicated below::				1.4 Documentitems Only		2.4 Replace a Component in All Bills
	a. mrp = programmer's access				1.5 Kit Items Only		
	b. srpadmin = database administrator				1.6 Partition Items Only		
	c. srpupdate = allows changes to records						
	d. srpquery = allows queries and reports						
	2. Access to individual screens is controlled by set-up as						
	I = Inquire (query & report), A= Add Record, M= Modify Record &, D= Delete Record						
Data Base Administrator at site and SMC							
	Establish access permissions for XRP-II users and groups	1					
	Define screen group names	1					
	Register authorized XRP-II users	1					
	Define printer programs	1					
	Bill screen/report attributes	1					
	Backup database	1					
	Restore database	1					
	Install/verify XRP-II SW updates	Command Line Procedure					
Site-level CM Admin (DAAC, EDC, & SMC) = srpadmin							
	Site XRP DBA	All screens plus tools (other applications)					
	I,A,M,D item catalog records	1	2	3	+(1.1--1.6)		
	I,A,M,D engineering change records	1	2	3			+(2.1, 2.2)
	I,A,M,D product structure records	1	2	3			+(2.1, 2.2)
	I,A,M,D implementation status records	1	2	3	+(1.1--1.6)		
	I,A,M,D interdependency records	1	2	3			
	Generate site-level reports	1	2	3		3	
	Export site-owned record changes to SMC	1					
	Establish/change release/maintenance baselines	1	2	3	+(1.1--1.6)	3	+(2.1, 2.2)
	Define user/group access to XRP	1					
	Synchronize XRP w/other CM tools and sites (###)						
	###DDTS (CCRs)	1	2				
	###ClearCase (SW Versions)						
	###Remedy (Trouble Tickets)						
	###System Updates						
	Import records from SMC						
	Maintain Resp Eng list associated with control items	1	2	3	+		
	Record temp or emergency control item changes	1	2			3	+(2.1)
	Read all XRP records (incl historical records)	1	2	3			

Table 9.9-2. Screen Allocations to Tasks Groups (2 of 9)

Table 9.9-2: Screen Allocations (2)

Tasks Groups	Tasks	Main	Baseline Management	1. Control Item Master	Data Screens	2. Bill of Material	Data Screens
					1.1 All Control Items		2.1 Engineering Change Entry
					1.2 Hardware Items Only		2.2 Engineering Change Approval
	N.B.				1.3 Software Items Only		2.3 Product Structure Maint
	1. Access to the XRP-II screens is controlled via Groups as indicated below::				1.4 Document Items Only		2.4 Replace a Component in All Bills
	a. mrp = programmer's access				1.6 Host Items Only		
	b. srpadmin = database administrator				1.8 Partition Items Only		
	c. srpupdate = allows changes to records						
	d. srpquery = allows queries and reports						
	2. Access to individual screens is controlled by set-up as						
	I = Inquire (query & report), A= Add Record, M= Modify Record & D= Delete Record						
	Modify logical operations views of baselines (baseline product structure data)	1	2			3	4
	Generate Resource Planning BOM; forward updated report to RPIWS	Command Line Only:					
	XRP Backups	"ACCELL" lod					
ECS-level CM Admin = srpadmin (@ SMC) and srpquery (@ DAACs & EDC)							
	Import XRP records from site/EDF						
	Generate system-level pre-defined reports	1	2	3		3	
	Generate system-level ad hoc reports	1	2	3		3	
	Export (deploy) release records						
	Establish/change ECS-level baselines	1	2			3	4
Maint Engr/ Sys Admin/ SEO = srpquery; (screens: impdat(M,I) and pdmaint)							
	Read all XRP records (incl historical records)	1	2				
	Modify implementation status for ECN	1	2			3	4
	Maintain Resource Dependency Table						
Test Engineer (on-site or ECS-level) = srpquery; (screens: impdat(M,I) and pdmaint)							
	Query test string records	1	2			3	4
	Modify implementation status for ECN						
Resource Planner = srpquery							
	Generate data output files report	Command Line Only					
	Review processing string control items	1	2				
ILS (inventory/ audit capability) = srpupdate; (screens: pibomcat)							
	Read all records (incl historical records)	1	2				
	Generate reports	1	2				
	Modify implementation status	1	2				
	Add records (COTS)	1	2	3	+(1.1-1.3)		

Table 9.9-2. Screen Allocations to Tasks Groups (3 of 9)

Table 9.9-2: Screen Allocations (2)

Tasks Groups	Tasks	Main	Baseline Management	1. Control Item Master	Data Screens	2. Bill of Material	Data Screens
					1.1 All Control Items		2.1 Engineering Change Entry
					1.2 Hardware Items Only		2.2 Engineering Change Approval
	N.B.				1.3 Software Items Only		2.3 Product Structure Maint
	1. Access to the XRP-II screens is controlled via Groups as indicated below:				1.4 Documentation Items Only		2.4 Replace a Component in All Bills
	a. mrp = programmer's access				1.5 Non-Stock Items Only		
	b. srpadmin = database administrator				1.6 Partition Items Only		
	c. srpupdate = allows changes to records						
	d. srpquery = allows queries and reports						
	2. Access to individual screens is controlled by set-up as						
	I = Inquire (query & report), A= Add Record, M= Modify Record & D= Delete Record						
	Audit properly against CRITICAL	1	2				
Trainer = srpquery							
	Generate reports for OJT/formal training	1	2				
Librarian = srpupdate; [screen: pibomcat)]							
	Update document records	1	2	3	4-(1.4		
	Maintain document/control item trace records	1	2				

Table 9.9-2. Screen Allocations to Tasks Groups (4 of 9)

Table 9.9-2: Screen Allocations (2)

Tasks Groups	Tasks	3. Query	Data Screens	4. Report	Data Screens	6. Utilities	Data Screens
			3.1 Control Items Query		4.1 Multilevel Bill Reports		6.1 Unit Of Measure Manager
			3.2 Hardware Items Query		4.2 Summarized Bill Report		6.2 Unit Of Measure Conversion
	N.B.		3.3 Software Items Query		4.3 Multilevel Where-Used Reports		6.3 Vendor Master Manager
	1. Access to the XRP-II screens is controlled via Groups as indicated below:		3.4 Host Items Query		4.4 Config Items List - One		6.4 Control Item Interdependency Mgr
	a. mrp = programmer access		3.6 Document Items Query		4.6 Config Items List - Two		6.6 Implementation Status
	b. xrpadmin = database administrator		3.8 Partition Items Query		4.8 Configured Articles List		6.8 Control Item Data Manager
	c. xrpupdate = allows changes to records		3.7 Product Structure Query		4.7 Version Description Reports		6.7 Low Level Code Manager
	d. xrpquery = allows queries and reports		3.5 Engineering Change Query		4.5 Site Baseline Report		6.5 Responsible Engineer Maintenance
					4.9 Change History		6.9 Item Class Manager
	2. Access to individual screens is controlled by set-up as				4.10 BOM Comparison Report		
	I = Inquire (query & report), A= Add Record, M= Modify Record & D= Delete Record						
Data Base Administrator at site and SMC							
	Establish access permissions for XRP-II users and groups						
	Define screen group names						
	Register authorized XRP-II users						
	Define printer programs						
	Edit screen/report attributes						
	Backup data base						
	Restore data base						
	Install/verify XRP-II SW updates						
Site-level CM Admin (DAAC, EDC, & SMC) = xrpadmin							
	Site XRP DBA						
	I,A,M,D item catalog records	3	+ (3.1-3.6)				
	I,A,M,D engineering change records	3	+ (3.5)				
	I,A,M,D product structure records	3	+ (3.7)			3	+
	I,A,M,D implementation status records					3	+ (5.5)
	I,A,M,D interdependency records					3	+ (5.4)
	Generate site-level reports			3	+ (4.1-4.10)		
	Export site-owned record changes to SMC						
	Establish/change release/maintenance baselines						
	Define user/group access to XRP						
	Synchronize XRP w/other CM tools and sites (###)						
	###DDTS (CCRs)			3	+		
	###ClearCase (SW Versions)						
	###Remedy (Trouble Tickets)						
	###System Updates						
	Import records from SMC						
	Maintain Resp Engrs associated with control items	3	+				
	Record temp or emergency control item changes						
	Read all XRP records (incl historical records)	3	+ (3.1-3.8)			3	+ (5.1-5.5)

Table 9.9-2. Screen Allocations to Tasks Groups (5 of 9)

Table 9.9-2: Screen Allocations (2)

Tasks Groups	Tasks	3. Query	Data Screens	4. Report	Data Screens	6. Utilities	Data Screens
			3.1 Control Items Query		4.1 Multilevel Bill Reports		6.1 Unit Of Measure Manager
			3.2 Hardware Items Query		4.2 Summarized Bill Report		6.2 Unit Of Measure Conversion
	N.B.		3.3 Software Items Query		4.3 Multilevel Where-Used Reports		6.3 Vendor Master Manager
	1. Access to the XRP-II screens is controlled via Group as indicated below:		3.4 Host Items Query		4.4 Config Items List - One		6.4 Control Item Interdependency Mgr
	a. mrp = programmer access		3.5 Document Items Query		4.5 Config Items List - Two		6.5 Implementation Status
	b. xrpadmin = database administrator		3.6 Partition Items Query		4.6 Configured Articles List		6.6 Control Item Data Manager
	c. xrpupdate = allows changes to records		3.7 Product Structure Query		4.7 Version Description Reports		6.7 Low Level Code Manager
	d. xrpquery = allows queries and reports		3.8 Engineering Change Query		4.8 Site Baseline Report		6.8 Responsible Engineer Maintenance
					4.9 Change History		6.9 Item Class Manager
	2. Access to individual screens is controlled by set-up as				4.10 BOM Comparison Report		
	I = Inquire (query & report), A= Add Record, M= Modify Record & D= Delete Record						
	Modify logical operators (views or baselines (baseline product structure data)						
	Generate Resource Planning BOM; forward updated report to RPIWS						
	XRP Backups						
ECS-level CM Admin = xrpadmin (as SMC) and xrpquery (as D							
	Import XRP records from site/EDF						
	Generate system-level pre-defined reports			3	+(4.1–4.10)		
	Generate system-level ad hoc reports	3	+(3.1–3.8)	3	+	3	+(5.3–5.5, 5.8)
	Export (deploy) release records						
	Establish/change ECS-level baselines						
Maint Engr/ Sys Admin/ SEO = xrpquery (screens: imp dat(M,D)							
	Read all XRP records (incl historical records)	3	+(3.1–3.8)			3	+(5.1–5.7, 5.8)
	Modify implementation status for ECN						
	Maintain Resource Dependency Table					3	+(5.4)
Test Engineer (on-site or ECS-level) = xrpquery (screens: imp							
	Query existing records	3	+(3.1–3.8)				
	Modify implementation status for ECN						
Resource Planner = xrpquery							
	Generate data output files report						
	Review processing string control items						
ILS (inventory/ audit capability) = xrpupdate; (screen: plus m							
	Read all records (incl historical records)	3	+(3.1–3.7)				
	Generate reports			3	+(4.1–4.10)		
	Modify implementation status					3	+(5.5)
	Add records (COTS)						

Table 9.9-2. Screen Allocations to Tasks Groups (6 of 9)

Table 9.9-2: Screen Allocations (2)

Tasks Groups	Tasks	3. Query	Data Screens	4. Report	Data Screens	6. Utilities	Data Screens
			3.1 Control Items Query		4.1 Multilevel Bill Reports		6.1 Unit Of Measure Manager
			3.2 Hardware Items Query		4.2 Summarized Bill Report		6.2 Unit Of Measure Conversion
	N.B.		3.3 Software Items Query		4.3 Multilevel Where-Used Reports		6.3 Vendor Master Manager
	1. Access to the XRPII screens is controlled via Groups as indicated below:		3.4 Host Items Query		4.4 Config Items List - One		6.4 Control Item Interdependency Mgr
	a. mrp = programmer access		3.6 Document Items Query		4.6 Config Items List - Two		6.6 Implementation Status
	b. xrpadmin = database administrator		3.8 Partition Items Query		4.8 Configured Articles List		6.8 Control Item Data Manager
	c. xrpupdate = allows changes to records		3.7 Product Structure Query		4.7 Version Description Reports		6.7 Low Level Code Manager
	d. xrpquery = allows queries and reports		3.8 Engineering Change Query		4.8 Site Baseline Report		6.8 Responsible Engineer Maintenance
					4.9 Change History		6.9 Item Class Manager
	2. Access to individual screens is controlled by set-up as				4.10 BOM Comparison Report		
	I = Inquire (query & report), A= Add Record, M= Modify Record & D= Delete Record						
	Audit properly against CIL/CAL			3	+ (pick your reports)		
Trainer = xrpquery							
	Generate reports for OJT/formal training	3	+ (3.1–3.8)	3	+ (4.1–4.10)		
Librarian = xrpupdate; [screen: pibomcat)]							
	Update document records	3	+ (3.4)				
	Maintain document/control item trace records					3	+ (5.4)

Table 9.9-2. Screen Allocations to Tasks Groups (7 of 9)

Table 9.9-2: Screen Allocations (2)

Tasks Groups	Tasks	6. System Utilities	Data Screens	Data Screens	7. System Tools	Data Screens
			6.1 System Parameters Manager	6.9 Site Master Manager		7.1 Screen Manager
			6.2 System Defaults Manager	6.10 Machine Network Maintenance		7.2 User Manager
	N.B.		6.3 Note Code Maintenance	6.11 Commodity Code Maintenance		7.3 Groups Manager
	1. Access to the XRP-II screens is controlled via Groups as indicated below:		6.4 Data Delete Utility	6.12 Import ELM Records		7.4 Screen Permission Control
	a. mrp = programmer access		6.5 Calendar Utility	6.13 Export Release Records		7.5 Printer Management
	b. srpadmin = database administrator		6.6 Calendar Report	6.14 Export Site-Unique Change Records		7.7 Data Dump Utility
	c. srpupdate = allows change to records		6.7 Transaction Log	6.15 Export SMC Change Records		7.8 Data Load Utility
	d. srpquery = allows queries and reports		6.8 Transaction Archive			
	2. Access to individual screens is controlled by set-up as					
	I = Inquire (query & report), A= Add Record, M= Modify Record & D= Delete Record					
Data Base Administrator at site and SMC						
	Establish access permissions for XRP-II users and groups				2	3(7.4)
	Define screen group names				2	3(7.3)
	Register authorized XRP-II users				2	3(7.2)
	Define printer programs				2	3(7.5)
	Edit screen/report attributes				2	3(7.1)
	Backup data base				2	3(7.7)
	Restore data base				2	3(7.8)
	Install/verify XRP-II SW updates					
Site-level CM Admin (DAAC, EDC, & SMC) = srpadmin						
	Site XRP DBA					
	I,A,M,D item catalog records					
	I,A,M,D engineering change records					
	I,A,M,D product structure records	2	3	3		
	I,A,M,D implementation status records	2	3	3		
	I,A,M,D interdependency records	2	3	3		
	Generate site-level reports					
	Export site-owned record changes to SMC	2		3(6.14)		
	Establish/change release/maintenance baselines					
	Define user/group access to XRP				2	3(7.2-7.4)
	Synchronize XRP w/other CM tools and sites (###)					
	###DDTS (CCRs)					
	###ClearCase (SW Versions)					
	###Remedy (Trouble Tickets)					
	###System Updates					
	Import records from SMC	2		3		
	Maintain Resp Eng list associated with control items					
	Record temp or emergency control item changes					
	Read all XRP records (incl historical records)	2	3(6.1-6.3, 6.5, 6.7, 6.9-6.11)		2	3(7.1-7.8)

Table 9.9-2. Screen Allocations to Tasks Groups (8 of 9)

Table 9.9-2: Screen Allocations (2)

Tasks Groups	Tasks	6. System Utilities	Data Screens	Data Screens	7. System Tools	Data Screens
			6.1 System Parameters Manager	6.9 Site Master Manager		7.1 Screen Manager
			6.2 System Defaults Manager	6.10 Machine Network Maintenance		7.2 User Manager
	N.B.		6.3 Note Code Maintenance	6.11 Commodity Code Maintenance		7.3 Groups Manager
	1. Access to the XRPII screens is controlled via Groups as indicated below:		6.4 Data Delete Utility	6.12 Import ELM Records		7.4 Screen Permission Control
	a. mrp = programmer access		6.5 Calendar Utility	6.13 Export Release Records		7.6 Printer Management
	b. srpadmin = database administrator		6.6 Calendar Report	6.14 Export Site-Unique Change Records		7.7 Data Dump Utility
	c. srpupdate = allows change to records		6.7 Transaction Log	6.15 Export SMC Change Records		7.8 Data Load Utility
	d. srpquery = allows queries and reports		6.8 Transaction Archive			
	2. Access to individual screens is controlled by set-up as					
	I = Inquire (query & report), A= Add Record, M= Modify Record & D= Delete Record					
	Modify logical operators (views of baselines (baseline product structure data)					
	Generate Resource Planning BOM; forward updated report to RPIWS					
	XRP Backups					
ECS-level CM Admin = srpadmin (as SMC) and srpquery (as DI						
	Import XRP records from site/EDF	2		3		
	Generate system-level pre-defined reports					
	Generate system-level ad hoc reports					
	Export (deploy) release records	2		3		
	Establish/change ECS-level baselines					
Maint Engr/ Sys Admin/ SEO = srpquery (screens: imp dat(M,D)						
	Read all XRP records (incl historical records)					
	Modify implementation status for ECN					
	Maintain Resource Dependency Table					
Test Engineer (on-site or ECS-level) = srpquery (screens imp						
	Query test string records					
	Modify implementation status for ECN					
Resource Planner = srpquery						
	Generate data output files report					
	Review processing string control items					
ILS (inventory/audit capability) = srpupdate; (screen: plan m						
	Read all records (incl historical records)					
	Generate reports					
	Modify implementation status					
	Add records (COTS)					

Table 9.9-2. Screen Allocations to Tasks Groups (9 of 9)

Table 9.9-2: Screen Allocations (2)

Tasks Groups	Tasks	6. System Utilities	Data Screens	Data Screens	7. System Tools	Data Screens
			6.1 System Parameters Manager	6.9 Site Master Manager		7.1 Screen Manager
			6.2 System Defaults Manager	6.10 Machine Network Maintenance		7.2 User Manager
	N.B.		6.3 Note Code Maintenance	6.11 Commodity Code Maintenance		7.3 Groups Manager
	1. Access to the XRP-II screens is controlled via Groups as indicated below:		6.4 Data Delete Utility	6.12 Import ELM Records		7.4 Screen Permission Control
	a. mrp = programmer access		6.5 Calendar Utility	6.13 Export Release Records		7.6 Printer Management
	b. srpadmin = database administrator		6.6 Calender Report	6.14 Export Site-Unique Change Records		7.7 Data Dump Utility
	c. srpupdate = allows change to records		6.7 Transaction Log	6.15 Export SMC Change Records		7.8 Data Load Utility
	d. srpquery = allows queries and reports		6.8 Transaction Archive			
	2. Access to individual screens is controlled by set-up as					
	I = Inquire (query & report), A= Add Record, M= Modify Record & D= Delete Record					
	Audit properly against CICL/CAL					
Trainer = srpquery						
	Generate reports for OJT/formal training					
Librarian = srpupdate; [screen: plbomcat)]						
	Update document records					
	Maintain document/control item trace records					

9.9.2 Procedures

9.9.2.1 Getting Started

XRP-II has a character-based user interface which employs screens for data entry and report generation, and menus for navigating to the screens. Data is entered via the keyboard in fields that are traversed from left to right row by row. On data entry screens, labels for fields whose values can be modified are displayed in upper case; those that can not are in initial caps. The database is updated every time a field's value changes, and a record of that change is written to a transaction log. The System Reference Manual describes how to use XRP-II's menus and screens.

Most data entry screens have a form and a table view. Form views offer full screen layouts of a data record's fields, whereas table views offer rows of records in a window that is panned to see columns of fields. System limitations, however, preclude all Baseline Manager form view fields from being displayed in table view.

Numerous functions can be performed at data entry screens. Commands available to an operator are screen-dependent and are listed near the bottom of each screen (hence their name: bottom-line commands). The More command helps the operator cycle through them. Most bottom-line functions are described in the System Reference Manual and Product Information Manual. Any that were added for Baseline Manager are described in the sections below along with the screens to which they pertain.

It is important to note that the UNIFY database management system that XRP-II uses does not support rules requiring entries in specific fields. Baseline Manager attempts some enforcement via the data entry screens, either by establishing default values where feasible when new records are created, or by blocking an operator from cursoring past a null field when in Add, Insert, or Modify modes. However, database updates can occur in ways that bypass these mechanisms. Operators must take care to enter all data needed for generating reports and for producing configuration profiles for resource planners.

To invoke XRP-II, double-click on its icon on the ECS Desktop. This executes a script named "pcs" which determines the operator's terminal type from the environment, prompts for a terminal id, and establishes a Baseline Manger operating environment. The script then starts XRP-II, passing it the operator's userid which it obtains from the system.

The first screen[1] an operator sees upon logging onto[2] XRP-II varies depending on the entry menu and screen group assigned to the operator. These assignments are made in the "users" configuration file described in section D.5 of the System Reference Manual. The assignments are made by groups of allocated tasks and functions that are controlled by the CM Administrator as

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[1] By convention, XRP-II uses the term "screen" when referring to a window containing a Datalook data entry form or table. Other windows, like the one described here, are called "menus", navigation paths to screens.

[2] An ECS customization bypasses XRP-II's standard login screen, normally the first screen an XRP-II system user would see.

explained in Table 9.9-2, Section 9.9.2.12 *Edit Groups File*, and Section 9.9.3 *Tunable Parameters.*

All XRP-II menus are similar in appearance and function the same way. Only the titles and selections vary. See the System Reference Manual for details on using the menus and screens.

9.9.2.2 Cataloging the Control Items

Data about one or more control items can be added, modified, or deleted by selecting an appropriate data entry screen from the Control Item Master menu. These screens modify the master file (or catalog) that describes control items individually. Each screen accesses a particular set of records and contains a unique set of fields corresponding to a control item's class. However, all screens function the same and all but one have identical bottom-line commands.

Control item master screens are Baseline Manager equivalents of the Part Master Maintenance screen described in section 3.4 of the Product Information Manual. Their fields are tailored for baseline management and the following bottom-line commands are added:

- Bom - navigates the operator to a Multilevel Bill of Materials Query screen for the current item. There, an operator can examine the historical record of first-level components for the item, then exit back to the All Control Items screen.
- Where - navigates the operator to a Multilevel Where-Used Query screen for the current control item. There, an operator can determine where the item (or any other item) is used in any bill of material, then exit back to the All Control Items screen.
- Ec - navigates the operator to an Engineering Change Query screen for the current item, where an operator can view each historical engineering change recorded for the item.

The screens neither set item effectivity dates nor link items to baseline records. Therefore, operators can add or modify control item data anytime a new item is established or whenever details about a previously recorded control item change, without affecting any bills of materials. Operators cannot use these screens to delete an item if the item is a component in another's bill. In this case, the Data Delete system utility must be used instead (see Section 9.9.2.12).

Most fields in a control item's master record are for information only. However, the following play a role in XRP-II processing.

- Control item identifier - Every item in the catalog has its own record and must have a unique identifier. By convention, core and site-specific control items are assigned numerical designators; site-unique control items (those established by a site) are given a 3-character site prefix. XRP-II relies on this differentiation when synchronizing site baseline changes with the database at the SMC (see Section 4.3.3.4 *Special Constraints*).
- Item class - as previously mentioned, the class to which a control item is assigned determines the set of characteristics or details that can be recorded about the item and the screens to be used to update and view the data.
- Planning resource - items marked as planning resources will be reported when Baseline Manager receives requests from resource planners for resource configuration data.

- Config Article - items marked as configuration articles form the basis for several custom ECS reports, including the Configured Articles List and the Version Description Report.
- Deployment - deployment data recorded for a control item influences:
  a) the contents of several ECS custom reports which use deployment site data for selecting and ordering data;
  b) resource configuration data generated for resource planners, which is generated for operational baselines whose implementation status is "production"

The subsections below describes the screens and corresponding fields.

9.9.2.2.1 All Control Items Screen

The All Control Items screen adds, modifies, and deletes general identification information about individual control items. It accesses every control item record, but does not contain fields describing an item's detailed characteristics. Details are handled by class-specific data entry screens described in Sections 9.9.2.2.2 thru 9.9.2.2.6.

Fields on this screen serve as a template for all control item master screens, and are described in Table 9.9-3. The following bottom-line command, however, is unique to this screen:

- **.Details** - navigates the operator to a control item update screen where details can be recorded about the current control item record.

Use bottom-line commands such as Select, Find, Next, and Prior to locate a record, and use Add, Insert, Modify, and Delete to enter update mode. Then edit the catalog via the keyboard, or use the Zoom command (on fields where it is active) to pick values from a list. Use Copypart to create a new item with data values from an existing one. When finished, exit database update mode. Then either proceed to other records or exit the screen.

Table 9.9-3. All Control Items Field Description (1 of 3)

Field Name	Data Type	Size	Entry	Description
control item id	string	20	required	Unique code for a version- or configuration-controlled item
name/ doc #	string	24	optional	Name by which a specific item, engineer, or vendor is known
description/title	string	54	optional	Textual characterization of an entity
mnemonic	string	8	optional	Code (or short name) by which item is referenced (e.g., MLCI)

Table 9.9-3. All Control Items Field Description (2 of 3)

item class	string	16		Group name for control items having common attribute types (software, software, design, document, host, network, site, baseline, partition, project, ...)
item subclass	string	16	optional	Group name that distinguishes among types of control items within a class
model/version	string	24	optional	Textual identifier for a level of functional capability for a control item
pred item	string	20	optional	Identifier of the previous version of a control item
current revision	string	3	(system supplied)	Identifier for the currently-active revision level of the item's product structure
highest revision	string	3	(system supplied)	Identifier for a control item's latest product structure revision
config article	string	1	Y, N	Code for distinguishing between control items that are configured articles and those that are not
planning resource	string	1	Y, N	Code for distinguishing between control items that are reportable for PDPS resource planning and those that are not
scope	string	1	optional ; c, s, u	Code indicating whether an item is core, site-specific or site-unique
deployment	N/A		“optional; zoom to list of deployment records	Link to the deployment table containing the list of sites to which a control item is deployed together with the installation date and implementation status of the control item at each site
mfr/dev	string	3		Coded name of the company/organization that produced a hardware control item

Table 9.9-3. All Control Items Field Description (3 of 3)

resp engineer	string	6	optional; zoom to list of engineers	Link to the name, address, and phone number of an item's responsible engineer or organization
commodity code	string	8	optional	Classification for how the item was produced or obtained (COTS, custom, mod-COTS, GFE, shareware, freeware, other)
site	string	6	optional	Code for the site where the control item record was created
project	string	10	optional; defaults to "ECS"	Name of the principal project under which the item was procured or developed
comment	string	60	optional	Miscellaneous information specific to the control item
code	string	2	optional	Identifier for a type or category of message that can be associated with a control item
note	string	30	optional	A message, used in conjunction with a code, that can be associated with a control item

9.9.2.2.2 Hardware Items Only Screen

The Hardware Items Only screen adds, modifies, and deletes information that identifies and characterizes hardware control items. These would typically be processor units, tape drives, disk systems, CD-ROM drives, and other similar system and network equipment. Only those catalog records whose Item Class field contains the value "hardware" are accessed.

Fields that identify a control item are the same as discussed in Section 9.9.2.2.1. Fields that store the detailed characteristics applicable only to hardware items are described in Table 9.9-4.

Use this screen the same way as described earlier for the All Control Items screen.

Table 9.9-4. Hardware Items Only Field Description

Field Name	Data Type	Size	Entry	Description
mfr	string	6	• optional • zoom to list of manufacturers and developers	Coded name of the company/ organization that produced a hardware control item
capacity/size	string	10	optional	Total capacity (e.g. storage) for a control item
format	string	10	optional	Classification that distinguishes hardware control items according to some technical specification
max exp slots	numeric	4	optional	Number of expansion slots an item contains
total ports	numeric	8	optional	Number of ports (e.g., serial ports, network connections) a control item has
io protocols	string	60	optional	List of protocols a hardware control item supports
install inst	text	N/A	optional	Text containing/ specifying where to find instructions for installing the control item

9.9.2.2.3 Software Items Only Screen

The Software Items Only screen adds, modifies, and deletes information that identifies and characterizes software control items. These would typically be application clients, application servers, databases, and patches whether custom or COTS. It accesses only those catalog records whose Item Class field contains the value “software”.

Fields that identify a control item are the same as discussed in Section 9.9.2.2.1. Fields that store the detailed characteristics applicable only to software items are described in Table 9.9-5.

Use this screen the same way as described earlier for the All Control Items screen.

Note: The installation instructions field is a text field. Text fields can only be displayed in a text box window activated via the Zoom bottom-line command. A “T” at the field indicates data exists in the text box.

Table 9.9-5. Items Only Field Description

Field Name	Data Type	Size	Entry	Description
variant	string	4	optional	Name of the type of computer on which a software control item has been built to run
tcp/udp port	numeric	8	optional	Numeric identifier of port used for communicating with control item
principal dir	string	50	optional	Pathname(s) at which the item is stored
license type	string	10	optional	Method by which software licenses are assigned (floating, user, machine, site…)
total licenses	numeric	4	optional	Number of seats, computers, or persons authorized to use a COTS application concurrently
install inst	text	N/A	optional	Text containing, or specifying where to find, instructions for installing the control item

9.9.2.2.4 Document Items Only Screen

The Document Items Only screen adds, modifies, and deletes information that identifies and characterizes baselined documents, such as specifications, manuals, and version-controlled forms. The screen accesses only catalog records whose Item Class field contains the value “document”.

Fields that identify a control item are the same as discussed in Section 9.9.2.2.1. Fields that store the detailed characteristics applicable only to document items are described in Table 9.9-6.

Use this screen the same way as described earlier for the All Control Items screen.

Table 9.9-6. Document Items Only Field Description

Field Name	Data Type	Size	Entry	Description
title	string	54	optional	Nomenclature used to identify document volumes
document number	string	24	optional	Code by which a document is known
publisher	string	3	optional	Coded name of the company/organization that authored a document control item
publ date	date	N/A	optional	Date associated with a document
latest chg notice	string	6	optional	The most recent change notice or the list of change notices issued for a document
issue	string	8	optional	Nomenclature used to distinguish among versions of a single edition of a document (e.g., draft, final, …)
refs	N/A		• optional • zoom to list of related control items	List of other, associated control items

9.9.2.2.5 Host Items Only Screen

The Host Items Only screen adds, modifies, and deletes information that identifies and characterizes control items that are system hosts. These would be assemblies of processors, software and peripherals such as fully configured servers and workstations, but may include other network-addressable resources for which the data fields on this screen are suited, including routers and switches. The screen accesses only those catalog records whose Item Class field contains the value “host”.

Fields that identify a control item are the same as discussed in Section 9.9.2.2.1. Fields that store the detailed characteristics applicable only to host items are described in Table 9.9-7.

Use this screen the same way as described earlier for the All Control Items screen.

Table 9.9-7. Host Items Only Field Description

Field Name	Data Type	Size	Entry	Description
DNS name/host id	string	24	optional	Local name by which the host is accessed; its Domain Name System name
# cpu's	numeric	4	optional	Number of CPUs in a control item
processor id	string	20	optional	Vendor-provided name for a family of processors
total ram	numeric	4	optional	Amount of main memory (in MB) the item contains
# logical disks	numeric	8	optional	Number of logical disk partitions in the bill of materials for a host
swap cache	numeric	8	optional	Total swap space (in blocks) allocated on a host
disk cache	numeric	8	optional	Total disk cache (in blocks) for a host
MAC address	string	17	optional	Machine's Media Access Control number
IP address	string	15	optional	Network address for a host
IO ports	string	60	optional	List of ports and associated services on a host
install inst	text	N/A	optional	Text containing, or specifying where to find, instructions for installing the control item

9.9.2.2.6 Partition Items Only Screen

The Partition Items Only screen adds, modifies, and deletes information that identifies and characterizes boot and data disk partitions associated with a host computer. It accesses only those catalog records whose Item Class field contains the value "partition".

Fields that identify a control item are the same as discussed in Section 9.9.2.2.1. Fields that store the detailed characteristics applicable only to disk partition items are described in Table 9.9-8.

Use this screen the same way as described earlier for the All Control Items screen.

Table 9.9-8. Partition Items Only Field Description

Field Name	Data Type	Size	Entry	Description
directory name	string	50	optional	Logical name used to access a device
device name	string	32	optional	Physical name used by a machine to access the device
logical allocation	string	32	optional; usually either "system" or "user"	Classification that distinguishes between disk partitions used by the system and those available for use by applications
block size	numeric	4	optional	Size of a block (in bytes) on a device
install inst	text	N/A	optional	Text containing, or specifying where to find, instructions for installing the control item

9.9.2.3 Define/Update What Comprises Baselines and Other Control Item Assemblies

Baselines are control items containing various components, each of which is itself another control item. Accordingly, baselines are sets of control items and can be thought of as assemblies.

XRP-II uses product structure records to describe assemblies. Each such record defines a single parent-component control item pair and contains data pertinent to the pairing, such as its effective dates and the quantity of the component needed to form the parent.

Product structure records are the basis for XRP-II's bill of material processing. They are used to generate most ECS reports, to extract data for resource planning, and to select control item records to distribute when a baseline change is released. Once the component structure of a baseline (or other configuration assembly) has been recorded, operators can generate multilevel bill of material reports to determine what comprised the baseline on any given date.

Control items and their product structure records are associated with engineering change notices (ECNs) in order to implement engineering change control. An engineering change notice is an XRP-II construct that defines for an item the addition of a new first-level component or a change in component quantity, unit of measure, or effective dates. Control items can be affected by more than one engineering change, and an engineering change can encompass more than one assembly. Operators can assign a revision code to a control item that undergoes a product structure change which doesn't affect its form, fit, or function. (This is not the same as an item's version code, which operators assign when an item's form, fit, or function does change.) Operators also assign a configuration change request and/or trouble ticket number for the ECN in order to document the basis for implementing the change. Engineering changes can be recorded in Baseline Manager at any time, but they must be marked "approved" before any effective dates can be recorded.

The four data entry screens operators use to maintain product structure data are each accessed from the Bill of Material menu which lists

- Engineering Change Entry,
- Engineering Change Approval,
- Product Structure Maintenance, and
- Replace a Component in all Bills.

The first two screens are discussed in the subsections below. The last two are fully described in section 4.4 of the Product Information Manual.

9.9.2.3.1 Engineering Change Entry Screen

Operators use the Engineering Change Entry screen whenever an engineering change for a control item is to be defined or modified. The screen is similar to the Engineering Change Maintenance screen described in the Product Information Manual. Differences are:

- Fields Project, CCR #, TT, Baseline/Release and Approval Date appear in lieu of certain other fields not pertaining to baseline management. Each is an information only field. These fields are described in Table 9.9-9.
- Neither the approval code nor active and inactive dates can be updated from this screen; an Engineering Change Approval screen is used instead (see Section 9.9.2.3.2). This allows operators to record new product structure data without setting an effective date or causing premature adjustments to existing bills of material. Both active and inactive dates are automatically set to the latest system date: Jan 5, 2072.
- The Items command can be used irrespective of the approval code's value.

Enter information about the change using Table 9.9-9 as a guide, then use the Items command to modify the list of components in the parent control item's product structure. The Items page is the same as that described in Section 4.3 of the Product Information Manual, but without the "offset" field which is not used in Baseline Manager. Be sure to enter an appropriate quantity for each component. Components having zero quantity will not appear in their parent's bill of materials.

Table 9.9-9. Engineering Change Entry Field Description

Field Name	Data Type	Size	Entry	Description
parent part	string	20	required; zoom to a list of control items	Identifier of the control item associated with the engineering change
engineering change	string	8	required	Number that uniquely identifies every product structure change action
description	string	54	system supplied	Textual characterization of an entity
project	string	10	optional; defaults to “ECS”	Name of the principal project under which the item was procured or developed
date entered	date		system supplied	Date that the ECN was created
operator id	string		system supplied	Identifier of the operator who created the ECN
approval date	date	N/A	system supplied	Date an engineering change is formally sanctioned by an approval authority
approval code	string	1	system supplied; defaults to “E” for entered	Code that distinguishes among lifecycle stages for engineering changes; must be "A" (approved) for active date to be set
ccr #	string	30	optional	Reference to the CCR authorizing the configuration change
tt	string	15	optional	Reference to the trouble ticket authorizing the configuration change
sort order	string	1	optional ; P, R, or S	Code that specifies how component parts are to be sorted on an engineering change screen's items page
drawing	string	20	optional	Control item identifier of a drawing associated with a control item and engineering change
revision	string	3	optional	Change level for a control item that has undergone a product structure change
implementation code	string	2	optional	Code that distinguishes between permanent and temporary changes
baseline/ release	string	3	optional	Name, version, description, or identifier of a baseline with which an engineering change is associated
active date	date		system supplied (Jan 5, 2072)	Date on which a product structure relationship between two control items is effective
inactive date	date		system supplied (Jan 5, 2072)	Date on which the subject product structure is to be obsoleted or superceded

9.9.2.3.2 Engineering Change Approval Screen

Operators use the Engineering Change Approval screen whenever the approval status of an engineering change is to be modified. This screen is the same as the Engineering Change Entry screen, except that it can modify the approval code and date. Follow the field defintions in Table 9.9-10 for data entries. Changing the approval code to "A" for approved enables active and inactive date fields, allowing operators to set effectivity dates for new product structures.

Enter the new approval code and optional approval date, then add an active and inactive date. These active and inactive entries are used as defaults by the Items page when adding records to the parent's component list. The Copy_dates bottom-line function can be used to propagate active and inactive dates to component items already in the list.

Table 9.9-10. Engineering Change Approval Field Description (1 of 2)

Field Name	Data Type	Size	Entry	Description
parent part	string	20	required	Identifier of the control item associated with the engineering change
engineering change	string	8	required	Number that uniquely identifies every product structure change action
description	string	54	system supplied	Textual characterization of an entity
project	string	10	optional	Name of the principal project under which the item was procured or developed
date entered	date	N/A	system supplied	Date that the ECN was created
operator id	string	8	system supplied	Identifier of the operator who created the ECN
approval date	date		optional	Date an engineering change is formally sanctioned by an approval authority
approval code	string	1	optional; default is "E" (entered)	Code that distinguishes among lifecycle stages for engineering changes; must be "A" (approved) for active date to be set
ccr #	string	30	optional	Reference to the CCR authorizing the configuration change
tt	string	15	optional	Reference to the trouble ticket authorizing the configuration change

Table 9.9-10. Engineering Change Approval Field Description (2 of 2)

Field Name	Data Type	Size	Entry	Description
sort order	string	1	P, R, or S	Code that specifies how component parts are to be sorted on an engineering change screen's items page
drawing	string	20	optional	Control item identifier of a drawing associated with a control item and engineering change
revision	string	3	optional	Change level for a control item that has undergone a product structure change
implementation code	string	2	optional	Code that distinguishes between permanent and temporary changes
baseline/release	string	3	optional	Name, version, description, or identifier of a baseline with which an engineering change is associated
active date	date	N/A	optional; default is latest system date (Jan 5, 2072)	Date on which a product structure relationship between two control items is effective
inactive date	date	N/A	optional; default is latest system date (Jan 5, 2072)	Date on which the subject product structure is to be obsoleted or superceded

9.9.2.4 Distribute Baseline Change Records for a Release

Appropriate baseline management data can be distributed to affected sites whenever a new baseline, configuration item, or other control item is released. This data includes control item catalog, product structures, engineering changes, and deployment records pertaining to the control item being released and all the items in its bill of materials.

Operators use the Export Release Records utility to generate and tar formatted files that can be shipped to any ECS site for loading into XRP-II there. The program is accessed via the System Utilities menu and is described in Section 9.9.2.12.

9.9.2.5 Incorporate Release Records at a Site/ SMC

Occasionally, bulk Baseline Manager data must be loaded into XRP-II. The data, stored as a tar file, is usually received in support of a new release being distributed or a consolidation of site baseline changes at the SMC.

Operators load this data using XRP-II's Import Data utility. This program is accessed via the System Utilities menu and is described in Section 9.9.2.12.

9.9.2.6 Provide Site Baseline Change Records to the SMC

The Baseline Manager at the SMC can maintain consolidated records about operational baselines system-wide. Records created at local sites are shipped to the SMC where they are added to records centrally created at the SMC. To distinguish among them, centrally-created records begin with a number, while records originating at a site have a 3-character site prefix.

Baseline Manager supports this cross-site database synchronization with a transaction log and a program accessed via the System Utilities menu. XRP-II automatically logs a transaction whenever the contents of a Baseline Manager field changes. Operators at the sites periodically use the Export Site-Unique Changes utility to generate a formatted data file based on transactions logged but not previously reported. Operators can have XRP-II ftp the file to the SMC where SMC operators can load the data into the Baseline Manager there. Details about the transaction log and the Export Site-Unique Changes utility can be found in the discussions about system utilities within Section 9.9.2.12.

9.9.2.7 Maintain Control Item Deployment Data

Baseline Manager can maintain status information about the implementation of control items. For each item, an operator can create a record for a site and specify its implementation status and installation date. Deployment records about enterprise control items would normally be maintained at the SMC and distributed whenever a set of release records is shipped to the sites. The implementation status of these items is maintained at the sites as are like records about site-unique control items (those establish the sites). Status updates for the site-unique control items are shipped to the SMC whenever site-unique changes are reported (see Sections 9.9.2.6 and 9.9.2.12 (13) Export Site-Unique Changes Screen). Site updates to enterprise control item records remain at the sites so that SMC deployment data is preserved.

Operators must maintain deployment records because several Baseline Manager functions depend on them. For example, any report which lists control items according to site is generated using the deployment records to determine the site(s) under which the item should appear. This includes the Configuration Item List reports, the Configured Article List report, and the Version Description report. Also, the resource configuration file created for resource planners is built using these records to determine which of the site's operational baseline records has "production" status.

Operators use the Implementation Status Maintenance data entry screen to create and update records. This screen can be accessed via both the Utilities and System Utilities menus. The data entry screen is described in Section 9.9.2.11 (3) *Deployment Maintenance*.

9.9.2.8 Update Dependencies Among Control Items

Individual control items can have relationships -- or interdependencies -- among each other that need to be tracked. For example, application software needs certain operating system versions in order to function correctly, specification documents are associated with specific subsystems and configuration items, certain manuals describe particular configured articles, and each operational baseline derives from a specific release baseline.

XRP-II correlates interdependent pairs of control items via the Control Item Interdependency Maintenance screen. The screen is accessible from the Utilities menu and is described along with other baseline management utilities within Section 9.9.2.11.

9.9.2.9 Query Control Item Records

Operators granted read only permissions to Baseline Manager can retrieve, sort, filter and generate ad hoc reports of XRP-II database records using eight query screens all control items, hardware items, software items, document items, product structure, host items, partition items, and engineering change which are accessed from the Query menu. The six "items" screens closely mirror data base update screens described in Section 9.9.2.2, with an added field to display an item's local implementation status. The menu also has two screens for querying product structure and engineering change records, respectively.

Use the Control Items Query screen to browse the entire control item catalog minus its configuration details. To view full configuration details, use the individual query screens designed specially for hardware, software, document, host, and disk partition items.

Use the Product Structure Query screen to browse historical product structure records and display information about any parent-component control item pair. This is helpful, for example, when trying to determine why a control item is not appearing in a bill of materials as expected. Descriptions of this screen's fields can be found in section 4 of the Product Information Manual.

Use the Engineering Change Query screen to browse the chronology of changes to a particular control item and examine which control items were affected by each engineering change. Refer to Section 4 of the Product Information Manual and Section 9.9.2.3.1 above for descriptions of the screen's fields.

9.9.2.10 Generate Pre-defined Reports

XRP-II produces several reports specifically tailored to support ECS configuration management activities. All contain information derived from records stored only in the XRP-II database on the host where the report is requested. Reports are written to the default printer in effect via the operator's environment settings when XRP-II is started, unless XRP-II has been configured to recognize specific print device destinations (see Section 9.9.2.12 (7) Edit Printers File Screen).

Some reports accept a range of control items on which to report. Ranges are specified the same way as when using the Select and Find bottom-line commands on data entry screens. Section 3.4.5 in the System Reference Manual explains how to enter range selection specifications.

All pre-defined reports available to the operator are accessed via XRP-II's Report menu of screens which includes selections for

(1) Multi-Level Bill Reports - defined in Section 6.5 of the XRP-II Product Information Manual.

(2) Summarized Bill Reports- defined in Section 6.6 of the XRP-II Product Information Manual.

(3) Multi-Level Where Used Reports- defined in Section 6.7 of the XRP-II Product Information Manual.

(4) Configuration Items List - One: Table 9.2-11 describes the screen's fields.

Specify a site or range of sites, a date for the configuration, and the number of copies of the report wanted. Then enter "E" for execute. XRP-II will report all ECS configuration items active and deployed at the specified sites as of the specified date.

Table 9.9-11. Configuration Items List - One Menu Screen Field Description

Field Name	Data Type	Size	Entry	Description
site or range	string	16	required; zoom to select from a list of sites	Short name for an ECS site
date of configuration	date	N/A	required	"As of " date used in selecting records from the configuration history of the site(s)
note	string	40	optional	Textual information to be added to the header of the report
configuration items list-1	numeric	2	required	Number of copies wanted

(5) Configuration Items List - Two: Operators use this report to produce a list of ECS configuration item components - both hardware and software - grouped by subsystem and configuration item. Table 9.9-11 above describes the screen's fields.

Specify a site or range of sites, a date for the configuration, and the number of copies of the report wanted. Then enter "E" for execute. XRP-II will report all ECS design components active and deployed at the specified sites as of the specified date.

(6) Configured Articles List: This report generates a list of the approved set of ECS configured articles in effect on a specified date at a specified site or sites, grouping the articles by parent configuration item. Table 9.9-11 above describes the menu screen's fields.

Specify a site or range of sites, a date for the configuration, and the number of copies of the report wanted. Then enter "E" for execute. XRP-II will report all active ECS configured articles for the specified sites as of the specified date.

(7) Version Description Reports: The Version Description Reports are used to generate a summarized bill of the approved set of ECS version controlled configured articles for a specified configuration item, subsystem, or release. Table 9.9-11 above describes the screen's fields.

Specify a site or range of sites, a date for the configuration, and the number of copies of the report wanted. Then enter "E" for execute. XRP-II will report all active ECS configured articles for the specified sites as of the specified date.

(8) Site Baseline Report: Operators use the Site Baseline Report to produce an indented bill of materials that lists what comprises one or more sites' operational baselines down to the configured article level. The screen works the same as the multilevel bill screen described in section 6.5 of the Product Information Manual, except it rejects identifiers for items that are not members of class "baseline".

Specify the identifier of the baseline control item and date of bill, then set the remaining parameters for the report. Enter "E" for execute. XRP-II will report all ECS configured articles active and deployed as part of the specified baseline.

(9) Change History: The Change History report generates a list containing the revision history of an ECS control item. Table 9.9-12 describes the screen's fields.

Specify the control item's identifier, then enter "E" for execute. XRP-II will report all versions and product structure revisions for the specified item together with details associated with the item change.

Table 9.9-12. Change History Field Description

Field Name	Data Type	Size	Entry	Description
control item id	string	20	required; zoom to select from a list of control items	Unique code for a version- or configuration-controlled item
note	string	40	optional	Textual information to be added to the header of the report
change history report	numeric	2	required	Number of copies wanted

(10) BOM Comparison Reports: The BOM Comparison Reports menu screen generates a list of the differences in the bills of material for any two control items. Operators use it, for example, to determine how approved operational baselines at two sites differ. Table 9.9-13 describes the screen's fields.

Specify identifiers for the two control items whose bills are to be compared. Next, indicate a bill of materials date for the comparison and the number of report copies wanted. Then enter "E" for execute, and XRP-II will produce a four-part report. For each of the two control items, XRP-II will first list all the control items that are in its bill and in the other's, then all the control items in its bill that are <u>not</u> in the other's.

Table 9.9-13. BOM Comparison Reports Field Description

Field Name	Data Type	Size	Entry	Description
control item id	string	20	required; zoom to select from a list of control items	Unique code for a version- or configuration-controlled item
date of bill	date		required	"As of " date used in selecting records from the configuration history of the control item
note	string	40	optional	Textual information to be added to the header of the report
bom comparison reports	numeric	2	required	Number of copies wanted

Screens for generating Multilevel Bill, Summarized Bill, and Multilevel Where Used Reports are fully described in Sections 6.5, 6.7, and 6.9 of the Product Information Manual. Section 9.9.8 contains sample reports.

9.9.2.11 Perform Baseline Management Master Files Maintenance

XRP-II groups together several programs that help standardize values for certain baseline management data, support product structure administration, and manage types of data for which a separate menu is not warranted. The screens supporting these programs are accessed via the Utilities menu.

The Unit of Measure Maintenance screen maintains codes and descriptions for Baseline Manager's units of measure. These codes are used on bill of material data entry screens, which can access them via "zoom" command to facilitate data entry and promote data consistency. The screen is described in section 3.2 of the Product Information Manual.

The Unit of Measure Conversion screen maintains factors used for converting between units of measure. This standard XRP-II capability, not used by Baseline Manager, is retained for use with inventory, logistics, and maintenance management functions scheduled for delivery in Release B. It is described in section 3.3 of the Product Information Manual.

The Control Item Date Maintenance screen supports a utility that is functionally equivalent to the Part Master Date Maintenance utility described in section 4 of the Product Information Manual. It cycles through product structure and product history files, determining the earliest and latest dates on which each control item is employed as a parent or component, and updates the active and inactive dates in the control item records accordingly. This utility should be run periodically (perhaps monthly), but need only be run if any product structures have been (or may have been) deleted, or if the bill of material screen "Replace a Component in All Bills" has been used. This utility is described in section 7.2 of the Product Information Manual.

The items that follow provide details for the Baseline Manager Utility menu's screens not discussed above

(1) Vendor Master Maintenance Screen: This screen maintains a list of companies in order to facilitate entering manufacturer and developer codes for control items and promote data consistency across control item records. An operator updating the control item catalog can select manufacturer/developer codes from this list via the "zoom" command on control item master screens.

Use this screen to update the list of manufacturers or developers. Table 9.9-14 describes its data entry fields.

Table 9.9-14. Vendor Master Maintenance Field Description

Field Name	Data Type	Size	Entry	Description
vendor id	string	6	required	Coded name of the company/organization that produced a control item
name	string	30	optional	Name by which a specific manufacturer or developer is known
qualification code	string	1	optional	Code that distinguishes vendors according to status as a source for a control item

(2) Control Item Interdependency Maintenance Screen: This screen maintains information about dependencies between any two control items. Any control item pair can have multiple dependency relationships; however, each of the control items must exist in the control item catalog. Dependency types are operator-specified and non-constrained. Baseline Manager does <u>not</u> maintain an on-line chronological history of dependencies or dependency changes for a control item, but records can be both downloaded and printed so they can be saved for historical purposes.

Use this screen to add, delete, modify, or browse dependency records. The table view is particularly well-suited for displaying lists of all dependencies associated with a given control item. Placing the cursor on either of the control items activates the bottom-line commands "Where" and "Bom". Use the "Where" command to view product structure records in which the control item is a component in some other item's bill. Use the "Bom" command to view product structure records in which the control item is a parent with a bill containing other control items.

This screen's fields are described in Table 9.9-15.

Table 9.9-15. Control Item Interdependency Maintenance Field Description

Field Name	Data Type	Size	Entry	Description
item one	string	20	required; zoom to select from control items list	Unique code for a version- or configuration-controlled item (normally, a control item id) that is the subject of the dependency relationship.
name	string	24	system supplied	Name by which a specific item, engineer, or vendor is known
description	string	54	system supplied	Textual characterization of an entity
version	string	24	system supplied	Textual identifier for a level of functional capability for a control item
revision	string	3	system supplied	Identifier for the currently-active revision level of the item's product structure
dependency type	string	20	required	Code or nomenclature describing the relationship between two control items
item two	string	20	required; zoom to select from control items list	Unique code for a version- or configuration-controlled item (normally, a control item id) that is the object of the dependency relationship

(3) Control Item Deployment Maintenance Screen: This screen maintains information about the deployment and implementation of control items system-wide. One record can be created for each control item for each site. The control item must exist in the control item catalog, and the site must exist in the site list (see Section 9.9.12 (8) *Site Master Maintenance Screen*). Baseline Manager does not maintain a chronological history of deployment data or deployment data changes for a control item or a site.

Use this screen to maintain and browse all control item deployment records. Use the table view to display comprehensive lists of the sites to which a control item is (being) deployed and of the control items (being) deployed to a site.

Note: The field “Implementation Status” has special significance in extracting resource profiles for resource planners. Control records are selected only if the items they describe are in the bill of materials of site operational baselines whose implementation status is “production”.

Table 9.9-16. Control Item Deployment Maintenance Field Description

Field Name	Data Type	Size	Entry	Description
control item id	string	20	required; zoom to select from control items list	Unique code for a version- or configuration-controlled item
site	string	6	required; zoom to select from a list of sites	Mnemonic or short name for an ECS site
installation date	date	N/A	optional	Designated date a control item is to be or was installed at a site
implementation status	string	20	optional;	Classification of a control item according to operational life cycle state (e.g., projected, installed, production, inactive, maintenance, and test

(4) Low Level Code Maintenance Screen: This utility is equivalent to the Low Level Code Maintenance utility described in section 4 of the Product Information Manual, except options are available for specifying a subset of records to process. It regenerates low level codes maintained in the control item file by the system logic for its own use (see section 4.2 of the Product Information Manual). These codes affect the efficiency of certain XRP-II processing. They also appear in the headers of bill of material and where used reports to identify the deepest level at which a subject control item is found in any recorded product structure tree.

This utility should be run periodically (perhaps monthly), but need only be run if any product structure records have been (or may have been) deleted. The screen explains options provided to operators.

(**5) Responsible Engineer Maintenance Screen:** This screen maintains data about individuals in order to facilitate identifying points of contact for individual control items. An operator updating the control item catalog can select a code for an engineer from this list via the "zoom" command on control item master screens.

Use this screen to update the list of responsible engineers for control items. Table 9.9-17 describes its data entry fields.

Table 9.9-17. Responsible Engineer Field Description

Field Name	Data Type	Size	Entry	Description
engineer	string	6	required	Organization or task code assigned to an engineer assigned responsibility for a control item
name	string	30	optional	Name of the responsible engineer
address	string	30	optional	Street address where the responsible engineer is located
city	string	20	optional	Name of the city in which the responsible engineer is located
state	string	2	optional	Name of the state in which the responsible engineer is located
zip	string	10	optional	Postal code where the responsible engineer is located
phone	string	8	optional	Phone number for the responsible engineer

(6) Serial Numbers Maintenance Screen: The Serial Numbers Maintenance screen maintains a list of ECS-issued serial numbers or other inventory-related identifier numbers indexed to control items, providing a rudimentary inventory tracking mechanism. The same serial/inventory number can be used in multiple records, one for each control item associated with it.. Similarly, a control item identifier can be used in multiple records, one for each serial number associated with it. Multiple records for a serial- or inventory-control item pair can also be maintained so item movements can be tracked by date. The fields for this screen are described in Table 9.9-18.

Table 9.9-18. Serial Numbers Maintenance Field Description

Field Name	Data Type	Size	Entry	Description
serial number	string	12	required	Identifier for a control item unit produced or deployed
control item id	string	20	optional; zoom to select from control item list	Unique code for a version- or configuration-controlled item
date	date	N/A	optional	Date of transaction
site	string	6	optional	Mnemonic or short name for an ECS site

9.9.2.12 Perform XRP-II Master Files Maintenance

XRP-II groups together several programs that help standardize values for all of XRP-II and support system administration functions such as user access control and inter-site data exchange.

The screens supporting these programs are accessed via the System Utilities menu. The Note Code Maintenance, Data Delete Utility, and Shop Calendar Utility are fully described in the System Reference Manual. The remaining utilities are discussed in the items that follow.

(1) System Parameter Maintenance Screen: This screen maintains system-wide, XRP-II parameters and is principally used when first installing the system. Since Baseline Manager uses only a subset of the full XRP-II capabilities, this is a scaled down version of the screen described in section 6 of the System Reference Manual. It contains only the fields needed to tailor the system to the site at which it operates as summarized in Table 9.9-19.

The system parameter key is the key field of the system parameter file. The value "A" designates the active record, which is set when the database is created and must always be present in order for XRP-II to function.

In the site identifier field, enter the code for the ECS site where the copy of XRP-II that the operator is using is installed. This data is used primarily in report headers and file names that XRP-II creates.

In the last control item identifier field, enter a value XRP-II is to use in determining the next available identifier when an operator requests a default for a new item being added or inserted in the control item catalog. The value must end in a numeral, which XRP-II automatically increments. This identifier should always have the site's designated prefix: the first three characters of the site identifier.

Table 9.9-19. System Parameters Maintenance Field Description

Field Name	Data Type	Size	Entry	Description
system parameter key	string	1	required	Code that designates the active record in XRP-II's system parameter table
site	string	6	optional; zoom to select from a list of sites	Mnemonic or short name for an ECS site
last control item id	string	20	optional	Unique code for a version- or configuration-controlled item

(2) Transaction Log Screen: This screen allows operators to browse, and maintain if necessary, the database transaction log file. All fields in this file as described in Table 9.9-20, are system supplied. When a transaction is processed, the system provides the next available transaction number and records sufficient information to determine when any field was modified and by whom.

The log is an essential element in coordinating database changes among sites. The Export DAAC-Unique Changes utility analyzes the transactions to determine the database records that have been modified but not yet exported for transfer. It also sets the Transferred flag so the transaction can be bypassed next time the utility runs.

Table 9.9-20. Transaction Log Field Description

Field Name	Data Type	Size	Entry	Description
transaction key	numeric	5	system supplied	Number that uniquely identifies each update transaction
field number	numeric	8	system supplied	Identifier for the XRP-II field affected by the transaction
table name	string	10	system supplied	Name of the XRP-II table affected by the update transaction
operator id	string	8	system supplied	Userid of the operator making the update transaction
date	date	N/A	system supplied	Date of the update transaction
time	time	N/A	system supplied	Time of the update transaction
transaction type	string	1	system supplied	Code for the type of transaction: A (add), M (modify), or D (delete)
transferred	string	1	system supplied	Code that indicates that the transaction has been used to export and transfer database records that have changed.
record location	numeric	8	system supplied	Identifier for the transaction record's location within XRP-II

(3) Transaction Archive Screen: Control item data update transactions should periodically be deleted from the database after changed records have been exported. This makes room to log new transactions.

This screen copies to a named file the records of transactions that occurred on or prior to a specified cutoff date. It then deletes the records from the database.

Specify the date of the last transaction to archive and the name of a file in which to store the data as described in Table 9.9-21.

Table 9.9-21. XRP II GUI/CHUI Field Description

Field Name	Data Type	Size	Entry	Description
file name	string	8	required	Name of the file in which to store transaction records being archived
cutoff date	date	N/A	required	Date of the most recent transaction to be archived

(4) Serial Numbers Maintenance Screen: This screen maintains a list of ECS-issued serial numbers indexed to control items, providing a rudimentary inventory tracking mechanism. The screen can be accessed via the System Utilities menu for the convenience of the XRP-II administrator. It also appears on the Utilities menu and is described in detail in item (6) above.

(5) Edit Groups File Screen: The Edit Groups File screen provides access to a means for re-configuring Baseline Manager to recognize new groups of XRP-II menus and screens.

Groups enable system administrators to grant access to menus and screens collectively rather than individually. Groups are identified and defined in a "groups" configuration file. The file specifies what menus and screens an operator is allowed to access. It does not define the menu from which a submenu or data entry screen can be accessed.

The Edit Groups File screen displays a descriptive message and prompts for confirmation to proceed before executing the "vi" program against the "groups" configuration file. Edit the file, then exit "vi". The screen automatically recompiles group configuration binaries, making the new group definitions available to XRP-II's menu handler program. Note: This utility should not be run when other operators are logged on the system.

Section D.5 of the System Reference Manual describes the "groups" file in detail.

(6) Edit Users File Screen: The Edit Users File screen provides access to XRP-II's list authorized Baseline Manager operators, the "users" file. The list contains userids and specifies which group of menus and screens an operator can use. It can also specify an entry menu for each user as well as any deviations for the user from default permissions associated with each data entry screen.

The screen displays a descriptive message and prompts for confirmation to proceed before executing the "vi" program against the file. Edit the file, then exit "vi". XRP-II automatically recompiles user configuration binaries, making the new user definitions available to its menu handler program. Note: This utility should not be run when other operators are logged on the system. After it runs, you will receive a warning message then get logged out of XRP-II at your next keystroke. Simply log back in.

Section D.5 of the System Reference Manual describes the "users" file in detail.

(7) Edit Printers File Screen: The Edit Printer File screen provides access to XRP-II's list that defines printer selections and options available for generating both custom and ad hoc reports. The screen displays a descriptive message and prompts for confirmation to proceed before executing the "vi" program against the "msprinters" configuration file. After editing the file, operators exit "vi". The screen automatically recompiles printer configuration binaries, making the new printer definitions available to all operators.

Section 8.1.4 of the System Reference Manual describes the printers file's format and use.

(8) Site Master Maintenance Screen: The Site Master Maintenance screen lets operators maintain an index of ECS-related sites. This data is used solely to generate a site pick list to facilitate entering control item deployment data and report generation parameters on other screens. This screen is identical to the Branch Master Maintenance screen described in the section 6.8 of the System Reference Manual, except that two "site" labels are used in lieu of "branch" labels and the tax code field has been deleted. Baseline Manager does not implement the organizational branch processing described in the System Reference Manual, so site entries are not required for any XRP-II processing. Table 9.9-22 describes the "site" fields that were tailored for ECS.

Table 9.9-22. Site MasterMaintenance Field Description

Field Name	Data Type	Size	Entry	Description
site	string	6	required	Mnemonic or short name for an ECS site.
site name	string	46	optional	Full name of an ECS site.
phone number	string	8	optional	Phone number of a point of contact at the site
street address	string	30	optional	Address for the site
city	string	20	optional	Name of the city in which the site is located
state	string	2	optional	Abbreviation for the state in which the site is located
zip	string		optional	Postal code for the site
country	string		optional	Code for the country in which the site is located

(9) Machine Network Maintenance Screen: Operators use the Machine Network Maintenance screen to keep a list of MSS CM Server hosts to which Baseline Manager records may be shipped. Entries are accessible to the two System Utilities screens used when exporting site-unique records for the SMC and when exporting release records from the SMC to the sites, respectively. The list is not required; it exists solely as an aid for correctly specifying the target host for an ftp session.

Table 9.9-23. Machine Network Maintenance Field Description

Field Name	Data Type	Size	Entry	Description
machine name	string	32	required; must be	Full, network-addressable name of a host
site	string	6	optional; zoom to select from a list of sites	Mnemonic or short name for an ECS site
description	string	30	optional	Textual characterization of a host machine

(10) Commodity Code Maintenance: The Commodity Code Maintenance screen maintains standard codes and names that are used to classify a control item according to how it was produced or obtained for the project. This data, used as a pick list by control item update screens, promotes data standardization and facilitates recording control item data.

Use this screen to update the list of commodity codes to use for control items. Table 9.9-24 describes its data entry fields.

Table 9.9-24. Commodity Code Maintenance Field Description

Field Name	Data Type	Size	Entry	Description
commodity code	string	8	required	Classification for how a control item was produced or obtained (e.g., COTS, heritage, GFE, custom, mod-COTS, shareware, freeware, etc.)
description	string	20	optional	Full name for the commodity type

(11) Import Data Screen: The screen initiates loading of XRP-II data from tar files created by Baseline Manager's data export utilities. Selecting "Y" at the prompt causes XRP-II to process all files in the directory named in the IMPORTPATH environment variable. Tar files -- whose names identify the destination host, originator's site, and date and time created -- are processed in alphabetical order.. Upon completion, the original files are moved to an archive directory named in the IMPORTARC environment variable.

(12) Export Release Records Screen: Operators use this screen to prepare for distribution those records associated with the release of a specified baseline, configuration item, or other control item. They can choose to have XRP-II ftp the files to up to six remote hosts via a SEND NOW feature.

The screen with fields as defines in Table 9.9-25 extracts data about a specified item and all other items in its bill of materials as of a given date. XRP-II copies appropriate records from control item master, product structure, engineering change, interdependency, and deployment tables and stores them in the directory named in the EXPORTPATH environment variable in a format compatible with the Import Data utility. One tar file is created for each destination and given a name that identifies the destination machine name and site, the control item's identifier, and the effective date used for the bill. If the SEND NOW feature is used, XRP-II ftp's the files then moves them to the archive directory named in the EXPORTARC environment variable. If not, the files remain in the export directory to be transferred manually or until a subsequent export operation employs the SEND NOW feature.

Enter the identifier of one or more control items, then specify one or more hosts to receive the data. (Include domain names, or use IP addresses. Machine names can be selected from a managed list by using the "zoom" command.) Next, enter an effective date to use for the item's bill, and choose whether or not to ftp the files automatically. Begin data extraction by using the "execute" command. XRP-II will prompt for a login account and a password if it's been instructed to perform the ftp.

Table 9.9-25. Export Release Record Field Description

Field Name	Data Type	Size	Entry	Description
control item id	string	20	required; zoom to select from a control item list	Unique code for a version- or configuration-controlled item
machine	string	40	required; zoom to select from a list of machines	Full, network-addressable name of a host
date of release	date	N/A	required	"As of" date used in selecting records from the configuration history of a control item
send now	string	1	Y or N	Code that indicates whether or not to ship files immediately

(13) Export Site-Unique Changes Screen: This screen is used to extract copies of site-unique records that are to be transferred to another site such as the SMC. Extracted data is stored in a collection of files compatible with XRP-II's Import Data utility and converted to tar format. The tar file is then ftp'ed to specified hosts if the operator so chooses.

XRP-II analyzes the transaction log to determine which records have changed since the last time the utility was run and exports those associated with control items having a designated site prefix. (XRP-II expects that the site prefix to be the first three characters of the code for the site specified in the system parameters table (see item (1) above). Tar files are stored in the directory named in the EXPORTPATH environment variable. Once they have been ftp'ed, the files are moved to an archive directory named in the EXPORTARC environment variable.

Enter the name of one or more machines in the format described in Table 9.9-26 to receive the data (using their domain names or IP addresses), and choose whether or not to ftp the data files immediately after they are created. Names can be selected from a managed list by using XRP-II's "zoom" command. Use the "execute" command to begin data extraction. If the file is to be transferred too, supply the name of a login account and a password for the ftp when XRP-II prompts.

Table 9.9-26. Export Site-Unique Changes Field Description

Field Name	Data Type	Size	Entry	Description
name	string	40	required; zoom to select from a list of machines	Full domain name or network address of the host to receive the exported data file(s)

(14) Export SMC Data Screen: This screen extracts, and distributes to remote sites, copies of records about centrally-managed control items that have changed since the last time this function was used. (XRP-II expects centrally-managed control items to have identifiers that begin with a numeral.) XRP-II can ftp the files to up to ten remote hosts specified by the operator.

XRP-II analyzes the transaction log to determine what data has changed and which control items were affected. Records that reference qualifying control items are then copied from control item master, product structure, and engineering change tables into files compatible with XRP-II's Import Data utility (see section xxx). XRP-II uses ftp to transfer the files that are stored in a local directory (named in the EXPORTPATH environment variable) to a directory (named in the IMPORTPATH environment variable) on the remote hosts. Once they have been transferred, the files are moved from the export directory to an archive directory named in the EXPORTARC environment variable.

Enter the name of one or more hosts in the format described in Table 9.9-27 to receive the data (using either domain names or IP addresses), and choose whether or not to ftp the data files immediately after they are created. Names can be selected from a list of servers (see section xxx) by using the "zoom" command. Use the "execute" command to begin data extraction. If the file is to be transferred too, supply the name of a login account and a password for the ftp when XRP-II prompts.

Table 9.9-27. Export SMC Data Field Description

Field Name	Data Type	Size	Entry	Description
name	string	40	required; zoom to select from a list of machines	Full domain name or network address of the host to receive the exported data file(s)

9.9.3 Setting Tunable Parameters

XRP-II can be configured to limit access to authorized operators and regulate the operations each can perform. A system administrator at each site maintains group lists of related screens that operators can be assigned to access for performing work tasks. They also maintain a list of operators authorized to use XRP-II, together with their group assignments and any special access privileges.

XRP-II can also be configured to define system printers. Again, a system administrator at each site maintains a list of approved printer destinations for XRP-II reports. While specific printers can be named, the list often just offers operators choices of orientation and pitch for output that will be printed to their default printers.

Special programs, accessible via the System Utilities menu, are available to help maintain the files that contain these lists. They require that UNIX vi be used to edit the files. Section 5 of the System Reference Manual describes formats and use of the groups and users files; section 8.1.4 describes the printer file.

Table 9.9-28. Tunable Parameters

Operator Task	Affected Data/ Parameter	Range of Values	Source	Tool/ Change Control	Description
Modify "groups" list	menu and data entry screen sets	alpha-numeric strings	File $MSPATH/xrp/mms/menudata/groups	XRP-II and UNIX vi	defines named groups of menus/screens to which operators can be given access; can also specify inquire, add, modify, and delete privileges by screen in each group
Modify "users" list	operator authorizations	userids; group names; operator permissions (I, A, M, D)	File $MSPATH/xrp/mms/menudata/users	XRP-II and UNIX vi	Identifies users authorized to run XRP-II, assigning to each a group of menus/ screens that can be accessed; can also specify for each user an entry menu and changes to the list of screens and associated privileges the group has
Modify "printers" list	valid report destinations	printer names (may have up to 12 alpha-numeric chars); printer programs (limited to 20 characters)	File $MSPATH/xrp/lib/msprinters	XRP-II and UNIX vi	Identifies names by which system printers are known to XRP-II, and specifies printer program arguments for each

9.9.4 Special Constraints

The ECS environment imposes the following constraints on how XRP-II is used :

- Control item identifiers - XRP-II uses centralized database technology and is separately installed at each ECS site. This necessitates a special scheme for assigning identifiers to control items so that sites may safely exchange database records. For example, the SMC must be able to distribute centrally-maintained release records to multiple sites without interfering with records the sites locally maintain there. Similarly, the SMC must be able to absorb copies of site-maintained records forwarded by the sites to form the consolidated picture of system-wide baselines without contaminating centrally-maintained data. To distinguish between centrally-maintained and site-maintained records, Baseline Manager expects that identifiers of site-maintained control items have a 3-character prefix that matches the first three characters of the site's code (see Section 9.9.2.12, item (1)). To preclude confusion, identifiers of centrally-maintained control items should begin with a numeral.

- Database schemas - The XRP-II database schema must be identical at all ECS sites so that database records can be uniformly exchanged among them.

- Data entry screens - Table view driver programs cannot handle the number and size of fields used in the form view of many Baseline Manager data entry screens. Where limitations exist, fields that appear in table view were chosen either because they help identify control items or because they are likely to be used in multi-record operations.

9.9.5 Command Line Interface

Operators run XRP-II primarily via its menus and data entry screens. However, several standard utility programs can be run from the command line. These are documented in numerous places in the XRP-II System Reference and Product Information manuals.

An additional interface, configured specially for ECS, generates resource configuration files needed by resource planners using the Planning Subsystem. Usually employed on demand via Tivoli, operators can invoke it via the command line and view output in file "/usr/tmp/resplan" on the XRP-II host.

Table 9.9.29. Command Line Interfaces

Command Line Interface	Description and Format	When and Why Used
resplan	resplan mm/dd/yy (rolename), where: • mm/dd/yy is a valid date • rolename is a code for signalling Tivoli which sentry-log and administrator is to receive status messages resulting from the operation.	Used to generate a resource configuration file, primarily for resource planners. This operation is normally invoked by Tivoli

9.9.6 Outputs

XRP-II is a database application whose principal outputs as Baseline Manager are formatted data files. These files are used to exchange records among XRP-II systems, to describe production baseline configurations for resource planners, and to store copies of reports. Other, ancillary files are occasionally produced in the course of processing, but they are for XRP-II's internal use and generally of no interest to operators. Table 9.9-30 lists and describes each of the above types of outputs.

Table 9.9-30. Outputs

Output	Description and Format
export/import tar files	Produced by XRP-II's "export" utilities, these are archives containing one or more .dasc files. (See sections 4.3.3.1.5 and 4.3.3.1.7 above.)
.dasc files	Transient, ASCII files produced by XRP-II's "export" utilities and used by its import utility. Each file contains a header record followed by one or more detail records from a particular XRP-II database table. Each detail record contains values for a single database record, separated by pipe symbols. The header record contains the specification of the dump, identifying the database table and the names of the fields that correspond to values in the detail records. (See section 1.6 of the Database Tools and Techniques Manual.)
.dspc files	Transient, ASCII files produced by XRP-II's import and export utilities. Each file identifies the name of a database file (table) and the names of fields in that file in the order required to load data in the database. Data is separated by pipe symbols. (See section 1.6 of the Database Tools and Techniques Manual.)
resplan data file	An ASCII file consisting of one header record followed by one or more detail records. Each detail record identifies a control item that is marked as a planning resource and is part of a specified production baseline; it also identifies specific characteristics about the item. The header record contains a message that identifies the production baseline that was specified. This file is stored in directory /usr/tmp on the MSS CM Server, and a copy of it is transmitted, via Tivoli, to the requestor. (See section xxx above.)
print files	ASCII text files that contain reports requested via XRP-II data entry and report generation screens. These files are stored in the operator's home directory.
temporary files	Various working files XRP-II creates for its own internal use. These are stored in directory /usr/tmp on the MSS CM Server but not deleted by XRP-II.

9.9.7 Event and Error Messages

XRP-II issues both status and error messages to those using it. Unify manuals discuss common messages an operator may encounter, but no listing of standard XRP-II messages is provided in the COTS documentation. Messages are generally self-explanatory; however, some refer operators to log files which, in most cases, are intended for XRP-II programmers and require special training to interpret.

In addition, XRP-II records every database update event in a Transaction Log. This log, stored in the database, can be browsed via the Transaction Log screen (see Section 9.9.2.12, item (2)) to determine the date, time, operator, and type of changes made to XRP-II database tables. The transaction log does not contain messages, per se, and is not monitored or used by ECS' system management applications.

Many errors XRP-II reports result from an error returned by the Unify RDBMS. Details about fatal errors are written to the following error log files located within the XRP-II principal directory:

- /bin/errlog
- /def/errlog
- /dicty/errlog
- /bin/dbrbld.err
- /bin/uniload.err
- /dicty/uniload.err

These files generally do not contain the actual messages displayed to the operator, and they are meaningful mainly to the system administrator or XRP-II programmer. Appendix E of the Unify Direct HLI Programmer's reference manual describes some of the common messages written to the logs.

9.9.8 Reports

XRP-II can generate the pre-defined reports listed in Table 9.9-31. Each can be routed to the operator's display, a named file, or a printer.

XRP-II may make several printers available for a particular report. These printers often represent formatting choices rather than specific devices. Reports directed to a printer that does not correspond to a specific device will be printed on the operator's default printer device.

All of the pre-defined reports are generated according to specifications that are "compiled" using XRP-II's Datarite report writer. Authorized operators can develop custom specifications. See Section 8 of the Datalook/Datarite Reference Manual for details.

Table 9.9-31. Reports

Report Type	Report Description	When and Why Used
Bill of Materials	A list that identifies and describes an assembly's constituent control items	Ad Hoc for Resource Mgt, Maintenance & Admin
Indented Bill of Materials	A list that identifies and depicts the full assembly structure of a control item	Monthly/Ad Hoc for Resource Mgt, Maintenance & Admin
Summarized Bill Report	A list that identifies the control items in an assembly along with the quantity of each	Ad Hoc for Resource Mgt, Maintenance & Admin
Multilevel Where Used Display	A list that identifies and describes the assemblies in which a specified control item is used	Ad Hoc for Maintenance and Admin
Multilevel Where Used Report	A list that identifies and describes the assemblies in which a specified control item is used together with the effectivity dates for each	Monthly/Ad Hoc for Resource Mgt, Maintenance & Admin
Configuration Items List - One	A list of all ECS configuration items active and deployed at the specified sites as of a specified date	Ad Hoc for verification of deployed capabilities
Configuration Items List - Two	A list of all ECS design components active and deployed at the specified sites as of a specified date	Monthly/Ad Hoc for Resource Mgt, Maintenance & Admin
Configured Articles List	A list of all active ECS configured articles for specified sites as of a specified date	Monthly for inventory, audit, and accounting
Version Description Reports	A list of all active versions of ECS configured articles and associated versions of CIs for specified sites as of a specified date	Monthly/Ad Hoc for Release Mgt (VDD), Resource Mgt, Maintenance & Admin
Site Baseline	A list of all ECS configured articles active and deployed as part of a specified baseline	Monthly/Ad Hoc for Release Mgt (VDD), Resource Mgt, Maintenance & Admin
Change History	A list of all versions and product structure revisions for the specified item together with details associated with the item change	As required to support CCB activities
BOM Comparison Reports	A list that identifies the control items that two bills have in common as well as the control items in one that are not in the other.	As required to support CCB activities

9.9.8.1 Sample Reports

The figures that follow contain samples of Baseline Manager's pre-defined reports. One sample is provided for each report listed in Table 9.9-31.

(pibomr0) DATE: 08/19/96 TIME: 20:35

ECS Development Fac PAGE: 1

BILL OF MATERIALS

Control Item IDs: b0101400 Number of levels: 99

Explosion quantity: 99 Date of bill: 08/19/96

Control Item ID: b0101400 Project: ECS

TRMM Release of MLCI uom: EA Engineer: 34A678

Current Revision: 0 Versjon: B0

LVL	CONTROL ITEM ID	DESCRIPTION	QUANTITY PER	CUOM
1	b0101410	TRMM Release of SCM	1.0000	EA
2	b0101412	Clearcase Client for Sun Solaris 2.4	1.0000	EA
2	b0101414	ClearCase Server for Sun Solari 2.4	1.0000	EA
2	b0101416	ClearCase Scripts for TRMM	1.0000	EA
1	b0101420	TRMM Release of CRM	1.0000	EA
1	b0101430	TRMM Release of BM	1.0000	EA

There are 6 components in this bill.

Figure 9.9-7. Bill of Materials Report

(pibomr1) DATE: 08/19/96 TIME: 20:35

ECS Development Fac INDENTED BILL OF MATERIALS PAGE: 1

Control Item IDs: b0101400 Number of levels: 99

Explosion quantity: 99 Date of bill: 08/19/96

Assembly: b0101400 Project: ECS uom: EA

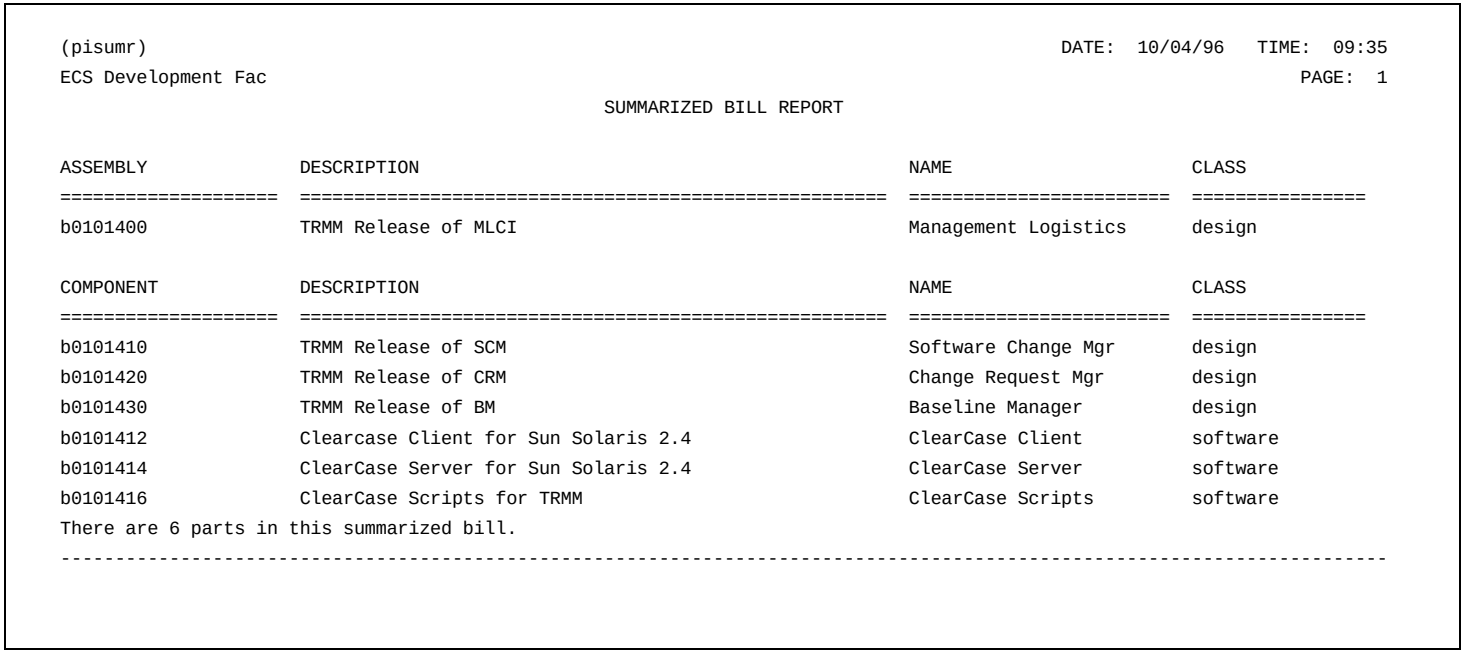
TRMM Release of MLCI Low level code: 2 Responsible Engineer: 34A678

Active date: 05/20/96 Inactive date: **/**/**

LEVEL	CONTROL ITEM ID	NAME	IMPLEMENTATION STATUS	ITEM CLASS / SUBCLASS	MODEL/VERSION	QUANTITY PER	ACTIVE DATE	INACTIVE DATE
1	b0101410	Software Change Mgr	production	design	A	1.0000	05/20/96	**/**/**
	TRMM Release of SCM							
.2	b0101412	ClearCase Client	production	software	2.1	1.0000	05/23/96	**/**/**
	Clearcase Client for Sun Solaris 2.4							
.2	b0101414	ClearCase Server	production	software	2.0.2	1.0000	05/23/96	**/**/**
	ClearCase Server for Sun Solaris 2.4							
.2	b0101416	ClearCase Scripts	production	software	A	1.0000	05/23/96	**/**/**
	ClearCase Scripts for TRMM							
1	b0101420	Change Request Mgr	production	design	A	1.0000	05/20/96	**/**/**
	TRMM Release of CRM							
1	b0101430	Baseline Manager	production	design	A	1.0000	05/20/96	**/**/**
	TRMM Release of BM							

There are 6 components in this bill.

Figure 9.9-8. Indented Bill of Materials



(pisumr) DATE: 10/04/96 TIME: 09:35
ECS Development Fac PAGE: 1

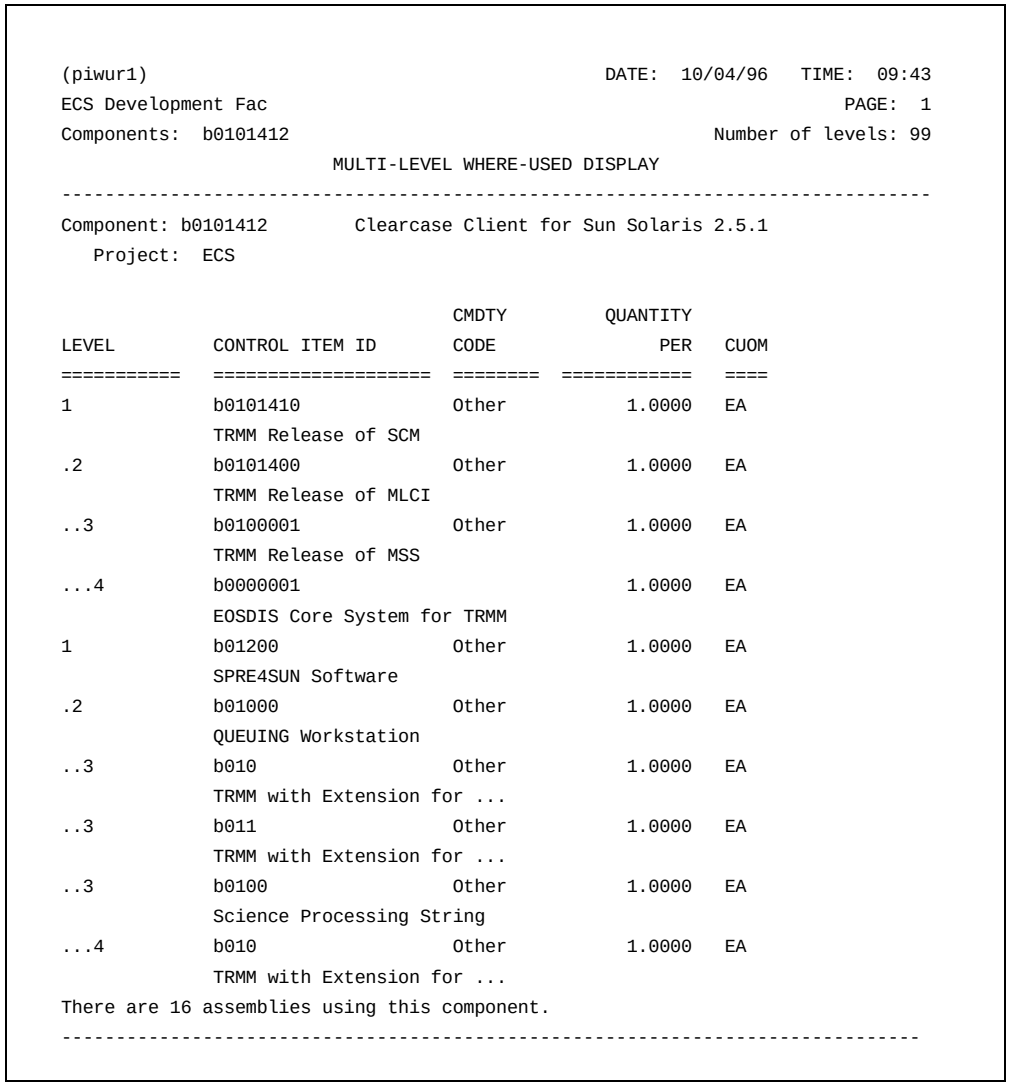
SUMMARIZED BILL REPORT

ASSEMBLY	DESCRIPTION	NAME	CLASS
b0101400	TRMM Release of MLCI	Management Logistics	design

COMPONENT	DESCRIPTION	NAME	CLASS
b0101410	TRMM Release of SCM	Software Change Mgr	design
b0101420	TRMM Release of CRM	Change Request Mgr	design
b0101430	TRMM Release of BM	Baseline Manager	design
b0101412	Clearcase Client for Sun Solaris 2.4	ClearCase Client	software
b0101414	ClearCase Server for Sun Solaris 2.4	ClearCase Server	software
b0101416	ClearCase Scripts for TRMM	ClearCase Scripts	software

There are 6 parts in this summarized bill.

Figure 9.9-9. Summarized Bill Report



```
(piwur1)                                          DATE:  10/04/96   TIME:  09:43
ECS Development Fac                                                   PAGE:  1
Components:  b0101412                                  Number of levels: 99
                        MULTI-LEVEL WHERE-USED DISPLAY
--------------------------------------------------------------------------------
Component: b0101412        Clearcase Client for Sun Solaris 2.5.1
   Project:  ECS

                                   CMDTY         QUANTITY
LEVEL         CONTROL ITEM ID      CODE               PER   CUOM
===========   ==================   ========  ============   ====
1             b0101410             Other           1.0000   EA
              TRMM Release of SCM
.2            b0101400             Other           1.0000   EA
              TRMM Release of MLCI
..3           b0100001             Other           1.0000   EA
              TRMM Release of MSS
...4          b0000001                             1.0000   EA
              EOSDIS Core System for TRMM
1             b01200               Other           1.0000   EA
              SPRE4SUN Software
.2            b01000               Other           1.0000   EA
              QUEUING Workstation
..3           b010                 Other           1.0000   EA
              TRMM with Extension for ...
..3           b011                 Other           1.0000   EA
              TRMM with Extension for ...
..3           b0100                Other           1.0000   EA
              Science Processing String
...4          b010                 Other           1.0000   EA
              TRMM with Extension for ...
There are 16 assemblies using this component.
--------------------------------------------------------------------------------
```

Figure 9.9-10. Multilevel Where-Used Display

```
(piwur)                                                                                DATE:  10/04/96   TIME:  09:43
ECS Development Fac                       MULTI-LEVEL WHERE-USED REPORTS                                    PAGE:  1
Components: b0101412                                                                           Number of levels: 99

-------------------------------------------------------------------------------------------------------------------
Component:  b0101412           Project:     uom:  EA
            Clearcase Client for Sun Solaris 2.4                     Low level code:   4    Planner:  34A678
Active date:  05/23/96   Inactive date:  **/**/**

                                                                               EXTENDED                   INACTIVE
LEVEL         CONTROL ITEM ID                              CMDTY CODE  CUOM   QUANTITY      ACTIVE DATE  DATE
===========   ====================                         ========    =====  ===========   ===========  =========
1             b0101410                                     Other       EA             1.0   05/23/96     **/**/**
              TRMM Release of SCM
.2            b0101400                                     Other       EA             1.0   05/20/96     **/**/**
              TRMM Release of MLCI
..3           b0100001                                     Other       EA             1.0   05/20/96     **/**/**
              TRMM Release of MSS
...4          b0000001                                                 EA             1.0   05/05/94     **/**/**
              EOSDIS Core System for TRMM
1             b01200                                       Other       EA             1.0   05/23/96     **/**/**
              SPRE4SUN Software
.2            b01000                                       Other       EA             1.0   05/23/96     **/**/**
              QUEUING Workstation
..3           b010                                         Other       EA             1.0   05/01/96     **/**/**
              TRMM with Extension for ...
..3           b011                                         Other       EA             1.0   05/23/96     **/**/**
              TRMM with Extension for ...
..3           b0100                                        Other       EA             1.0   05/25/96     **/**/**
              Science Processing String
...4          b010                                         Other       EA             1.0   05/01/96     **/**/**
              TRMM with Extension for ...
There are 16 assemblies affected by this component.
------------------------------------------------------------------------------------------------------------
```

Figure 9.9-11. Multilevel Where-Used Report

(cil1) DATE: 08/19/96 TIME: 19:26

ECS Development Fac ECS CONFIGURATION ITEMS LIST - LEVEL ONE PAGE: 1

SITE: GSFC Date of bill: 05/30/96

Subsystem: MSS Management Subsystem

CI MNEMONIC	CI NAME	CI CONTROL ITEM ID	CI DESCRIPTION	CI MODEL/VERSION	CI SCOPE
MACI	Management Agent	b0101100	Management Agent CSCI	A.IT.01	core
MCI	Management Software	b0101200	Management Software CSCI	A.IT.01	core
MHCI	Management Hardware	b0101300	Management Hardware CI	A.IT.01	core
MLCI	Management Logistics	b0101400	Management Logistics CSCI	A.IT.01	core

Subsystem: CSS Communication Subsystem

CI MNEMONIC	CI NAME	CI CONTROL ITEM ID	CI DESCRIPTION	CI MODEL/VERSION	CI SCOPE
DCCI	Distr Computing Software	b0102100	Distributed Computing Sof	A.IT.01	core
DCHCI	Distr Computing Hardware	b0102200	Distributed Computing Har	A.IT.01	core

Figure 9.9-12. Configuration Items List - One

(cil2) DATE: 08/19/96 TIME: 19:48

ECS Development Facility ECS CONFIGURATION ITEMS LIST - LEVEL TWO PAGE: 1

Site or range: EDF Date of bill: 05/30/96

Subsystem: MSS : Management Subsystem Version: A.IT.01

CI Item: MHCI : Management Hardware Version: A.IT.01

COMPONENT MNEMONIC	COMPONENT NAME	COMPONENT CONTROL ITEM ID	COMONENT DESCRIPTION	COMPONENT MODEL/VERSION	COMP SCOPE
	Enterprise Mgmt Svr	b0101310	TRMM Release of EMC Server	A.IT.01	core
	Local Sys Mgmt Svr	b0101320	TRMM Release of LSM Server	A.IT.01	core
	Enterprise Mgnt Wks	b0101330	TRMM Release of EMC Wkstation	A.IT.01	core
	Local Sys Mgmt Wks	b0101340	TRMM Release of LSM Wkstation	A.IT.01	core
	Management Printer	b0101350	TRMM Release of MSS Printer	A.IT.01	core

CI Item: MLCI Management Logistics CSCI Version: A.IT.01

Figure 9.9-13. Configuration Items List - Two

(cal7) DATE: 08/19/96 TIME: 20:12

ECS Development Fac ECS CONFIGURED ARTICLES LIST PAGE: 1

Site(s): EDF Date of Configuration: 05/30/96

CONFIGURATION ITEM: Management Logistics CSCI CONTROL ITEM ID: b0101400

CONFIGURED ARTICLE NAME	MOD/VER	CONTROL ITEM ID	IMPL STATUS	ITEM SUBCLASS	CMDTY CD	SCOPE
ClearCase Client	2.1	b0101412	production	appl-client	COTS	core
ClearCase Server	2.0.2	b0101414	production	appl-server	COTS	core
ClearCase Scripts	A.IT.01	b0101416	production	appl-scripts	custom	core

CONFIGURATION ITEM: Management Sftware CSCI CONTROL ITEM ID: b010120

Figure 9.9-14. Configured Articles List

(vdd) DATE: 09/05/96 TIME: 08:47

ECS Development Fac VERSION DESCRIPTION DOCUMENT PAGE: 1

Control Item ID: b0000001 Date of Configuration: 06/03/96

Site: EDF

SITE: EDF : ECS Development Fac

Subsystem: MSS : Management Subsystem Control Item ID: b0100001

Configuration Item: MLCI : Management Logistics Control Item ID: b0101400

Component: SCM : Software Change Mgr Control Item ID: b0101410

CONTROL ITEM NAME	MODEL/VERSION	CONTROL ITEM ID	MFR/DEV	CLASS	SUB CLASS	NUM LIC	ACTIVE DATE	INACTIVE DATE	CMDTY CODE	SCOPE
ClearCase Scripts	A.IT.01	b0101616	ECS	software	appl-scripts	99999	05/23/96	**/**/**	custom	Core
ClearCase Server	2.0.2	b0101414	ATR	software	appl-server	75	05/23/96	**/**/**	COTS	Core
ClearCase Client	2.1	b0101412	ATR	software	appl-client	75	05/23/96	**/**/**	COTS	Core
ClearCase DDTS Integrati	2	b0101418	ATR	software	appl-scripts	75	05/23/96	**/**/**	COTS	Core

Component: CRM : Change Request Mgr Control Item ID: 0101420

CONTROL ITEM NAME	MODEL/VERSION	CONTROL ITEM ID	MFR/DEV	CLASS	SUB CLASS	NUM LIC	ACTIVE DATE	INACTIVE DATE	CMDTY CODE	SCOPE
Dist Defect Track’g Sys	A.IT.01	b0101422	PUR	software	application	250	05/23/96	**/**/**	COTS	Core

Component: BLM : Basseline Manager Control Item ID: 0101430

CONTROL ITEM NAME	MODEL/VERSION	CONTROL ITEM ID	MFR/DEV	CLASS	SUB CLASS	NUM LIC	ACTIVE DATE	INACTIVE DATE	CMDTY CODE	SCOPE
XRP-II	3.0	b0101432	HTG	software	application	50	05/23/96	**/**/**	COTS	Core
UNIFY DBMS	5.0.7.2.0	b0101434	UNI	software	application	50	05/23/96	**/**/**	COTS	Core

Figure 9.9-15. Version Description Report

(sitebase) DATE: 08/19/96 TIME: 20:22

ECS Development Fac SITE BASELINE REPORT PAGE: 1

All Control Items Number of levels: 99

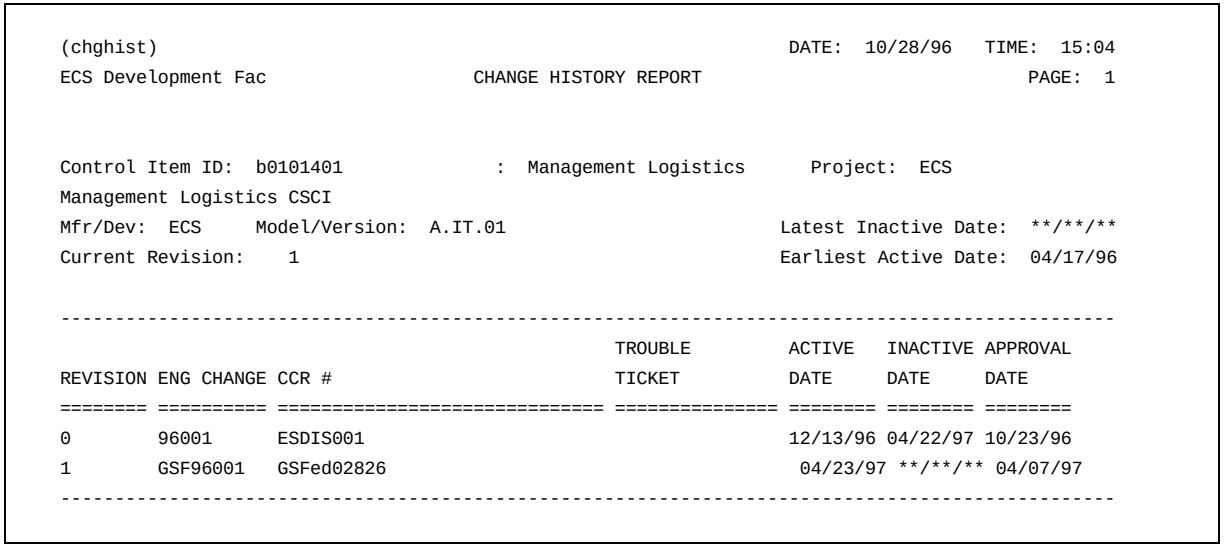
Date of configuration: 05/30/96

Baseline: bLAR010

TRMM Baseline with LaRC extenstions for …

LEVEL	CONTROL ITEM ID	DESCRIPTION	MFR/DEV	MODEL/VER	ACTIVE DATE	INACTIVE DATE
1	bLAR01000	Queuing Server		A…	05/01/96	**/**/**
.2	bLAR73005	Queuing Server boot partition	ECS	A…	05/23/96	**/**/**
.2	bLAR73006	Queuing Server user partition	ECS	A…	05/23/96	**/**/**
.2	bLAR1100	sprl7sun Hardware		A…	05/23/96	**/**/**
..3	b01101	SUN SPARCSTATION SX 20/71	SUN	SPARCSTATION SX 20/71	05/23/96	**/**/**
..3	b01102	20 INCH COLOR MONITOR	SUN		05/23/96	**/**/**
..3	b01103	EXPANDED 101 KEYBOARD	SUN		05/23/96	**/**/**
..3	b01104	3 BUTTON TRACKBALL MOUSE	SUN		05/23/96	**/**/**
..3	b01105	64 MB EXP MEM MODULE	SUN		05/23/96	**/**/**
..3	b01107	IBM 1.05GB INTERNAL DISK DRIVE	IBM		05/23/96	**/**/**
..3	b01109	SBUS FAST SCSI-2 ETHERNET CARD	SUN		05/23/96	**/**/**
..3	b01112	INTERNAL CD ROM	SUN	Ultra 2	05/23/96	**/**/**
.2	b01200	sprl7sun Software	ECS	A…	05/23/96	**/**/**
..3	b0101414	ClearCase Server for Sun Solar	ATR	2.0.2	05/23/96	**/**/**
..3	b0101416	ClearCase Scripts for TRMM	ATR	A	05/23/96	**/**/**
..3	b01201	SOLARIS OS	SUN	Solaris 2.4	05/23/96	**/**/**

Figure 9.9-16. Site Baseline Report



(chghist) DATE: 10/28/96 TIME: 15:04
ECS Development Fac CHANGE HISTORY REPORT PAGE: 1

Control Item ID: b0101401 : Management Logistics Project: ECS
Management Logistics CSCI
Mfr/Dev: ECS Model/Version: A.IT.01 Latest Inactive Date: **/**/**
Current Revision: 1 Earliest Active Date: 04/17/96

REVISION	ENG CHANGE	CCR #	TROUBLE TICKET	ACTIVE DATE	INACTIVE DATE	APPROVAL DATE
0	96001	ESDIS001		12/13/96	04/22/97	10/23/96
1	GSF96001	GSFed02826		04/23/97	**/**/**	04/07/97

Figure 9.9-17. Change History Report

(bomcmp) DATE: 10/04/96 TIME: 11:33
ECS Development Fac BILL OF MATERIAL COMPARISON REPORT PAGE: 1

Control Item One: b0101400 Control Item Two: b0101400
Version: 0 Version: 0
Description: TRMM Release of MLCI Description: TRMM Release of MLCI
Revision: 0 Revision: 1
Date of Configuration: 09/08/96 Date of Configuration: 10/04/96

Items in b0101400 found in: b0101400
Cfg Date: 09/08/96 Cfg Date: 10/04/96

CONTROL ITEM ID	DESCRIPTION	MFR/DEV	MODEL/VERSION	CLASS	SUBCLASS
b0101410	TRMM Release of SCM	ECS	A.IT.01	design	CSC
b0101420	TRMM Release of CRM	ECS	A.IT.01	design	CSC
b0101430	TRMM Release of BM	ECS	A.IT.01	design	CSC
b0101412	Clearcase Client for Sun Solaris 2.4	ATR	2.1	software	appl-client
b0101416	ClearCase Scripts for TRMM	ATR	A.IT.01	software	appl-scripts

Items in b0101400 NOT found in: b0101400
Cfg Date: 09/08/96 Cfg Date: 10/04/96

CONTROL ITEM ID	DESCRIPTION	MFR/DEV	MODEL/VERSION	CLASS	SUBCLASS
b0101414	ClearCase Server for Sun Solaris 2.4	ATR	2.0.2	software	appl-server

Items in b0101400 found in: b0101400
Cfg Date: 10/04/96 Cfg Date: 09/08/96

CONTROL ITEM ID	DESCRIPTION	MFR/DEV	MODEL/VERSION	CLASS	SUBCLASS
b0101410	TRMM Release of SCM	ECS	A.IT.01	design	CSC
b0101420	TRMM Release of CRM	ECS	A.IT.01	design	CSC
b0101430	TRMM Release of BM	ECS	A.IT.01	design	CSC
b0101412	Clearcase Client for Sun Solaris 2.4	ATR	2.1	software	appl-client
b0101416	ClearCase Scripts for TRMM	ATR	A.IT.01	software	appl-scripts

Items in b0101400 NOT found in: b0101400
Cfg Date: 10/04/96 Cfg Date: 09/08/96

CONTROL ITEM ID	DESCRIPTION	MFR/DEV	MODEL/VERSION	CLASS	SUBCLASS
b0101415	ClearCase Server for Sun Solaris 2.4	ATR	3.0	software	appl-server

Figure 9.9-18. BOM Comparison Report

9.9.8.2 Report Customization

All of the pre-defined reports discussed in Section 9.9.8.1 are generated according to specifications that are "compiled" using XRP-II's Datarite report writer. Authorized operators can modify these specifications or develop their own. See Section 8 of the Datalook/Datarite Reference Manual for details.

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